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**UNDER THE GENERAL EDITORIAL CHARGE OF
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**PROFESSOR OF LARYNGOLOGY AND RHINOLOGY,
CHICAGO POST-GRADUATE MEDICAL SCHOOL**

VOLUME IX.

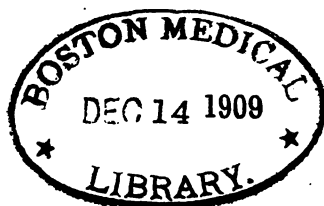
**SKIN AND VENEREAL DISEASES
MISCELLANEOUS TOPICS**

EDITED BY

**W. L. BAUM, M. D.
HAROLD N. MOYER, M. D.**

SERIES 1909

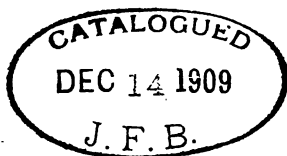
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Departments.

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Skin and Venereal Diseases

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SECTION II

Miscellaneous Topics

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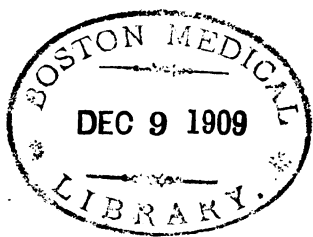
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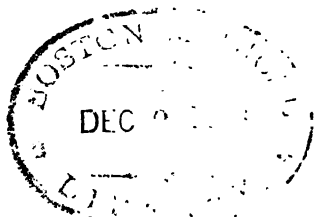
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SKIN AND VENEREAL DISEASES

BY

WILLIAM L. BAUM, M. D.





SKIN AND VENEREAL DISEASES

CHAPTER I.

CONSTITUTIONAL RELATIONS OF SKIN DISEASES.

Pellagra has assumed great prominence in American dermatologic and psychiatric literature. As was pointed out last year,¹ erythema with the acute confusional psychoses of toxemia and exhaustion is not clearly demarcated from pellagra nor is scorbutus in terminal demented and secondary confusional lunatics. Pellagra cutaneous lesions, according to B. Wolff,² are divisible into three more or less marked periods or stages, a stage of erythema or dermatitis, of desquamation and pigmentation and a stage of atrophy. Of these stages the first is the most distinct, the last the most characteristic. The erythema exists alone, pigmentation, desquamation and atrophy coexisting to a greater or less extent.

The stage of erythema may occur at any period in the course of the disease, either early or late. As a rule it makes its appearance in the spring, but may occur at any other time. It manifests itself as a mild erythema or a severe dermatitis with the production of blebs, followed by crusted lesions which heal, forming bluish discolorations. In the mild form there is a bright or dark red eruption affecting chiefly the exposed parts of the body, the hands, wrists, face and lips, though more extensive areas of the body may be primarily involved or be invaded by secondary extension. The erythema may or may not disappear on pressure, depending upon the relative degree of congestion of the skin. In some instances the erythema is rather irregularly distributed, occurring, for instance,

(1) PRACTICAL MEDICINE SERIES, ix, 1908, p. 31.

(2) Amer. Jour. of Derm., August, 1909.

on the forehead, between the brows, on the lips, but not affecting the cheeks or neck. In others there is a continuous sheet of redness, involving the localities of predilection. In the severe form of dermatitis the resemblance to an acute erythematous eczema is fairly close. Small bullæ and vesicles may appear at the height of the eruption, and drying, produce thick scales or thin crusts and leave the skin rough, ragged and discolored. The subjective symptoms of this stage may consist in moderate itching and burning or a sense of chilliness if the eruption is extensive. These symptoms are not nearly so well marked as in eczema of a corresponding degree of intensity. The erythematous stage does not bear a very close relation to the character of the general symptoms as the latter may be severe and the former mild or *vice versa*. The personal equation seems to be concerned in the number of attacks of the eruption and their relative severity. A good proportion of the patients gave the history of having had but one outbreak of erythema, and that at an advanced stage of the disease, while others had been subject to vernal appearances of it for a very long time. Though capricious in its appearance, the rash is prone to be associated with lesions of the buccal, vaginal and probably also the gastrointestinal mucosa. With the implication of the alimentary tract, the general symptoms become aggravated and the health declines rapidly. The same cause being generally active, the skin lesions are apt to manifest themselves simultaneously with the implication of other systems, digestive and cerebrospinal. When the erythema involves the mouth cavity, the mucosa becomes bright red, glazed and tender; the lips are scarlet, as though painted, and dry and glistening. The vagina is similarly affected, though there is not so much dryness as in the mouth; rather a tendency toward a leucorrheal discharge. The duration of the erythema is variable, lasting from 10 days to 6 weeks before giving place to the desquamative event.

The stage of desquamation follows upon the precursory erythema and varies directly in intensity with it. The scales are large and thick, especially upon the fingers and lips, or fine and branny. The skin beneath is red and shining, dull pink or bluish in hue, gradually assuming

a more normal aspect, but never quite taking on the natural tone of the sound skin.

The pigmentation resembles that following sunburn, but at times is much darker. The buccal and vaginal cavities are frequently denuded of epithelium and become dry, glazed and sensitive. Occasionally patches like mucous patches occur in the mouth and vagina, and petechia-like plaques are seen at the commissures of the lips. The palms of the hands share in the desquamation, but the nails appear unaffected even after repeated eruption.

The subjective symptoms are not marked. A number of patients complained greatly of burning of the soles of the feet, though they were apparently not involved. Painful fissures may appear at the interdigital webbs, and lips, particularly the lower, may become dry, stiff, chapped and painful. The pigmentation occupies the seat of the antecedent erythema and desquamation, and as a rule is much more distinctly marked about the dorsum of the hand and wrist than elsewhere. It is sharply defined and resembles the discoloration following a slight carbolic acid burn. The pigmentation about the face is not marked, but in some instances the skin is dusky and shows a fine scaliness, giving it a crêpe-like appearance. The desquamation is uniform, not patchy. The duration of this stage is very irregular. It may last a few weeks or many months.

The atrophic stage is, perhaps, the most distinctive feature of the cutaneous involvement of pellagra. It coexists with pigmentation, and as a rule is limited to the hands. The skin becomes exceedingly dry, withered, shrunken and shriveled like that of one long dead. The palms are thickened, even tylotic, the lines being much deepened. The hand is held in a semi-flexed position and has the appearance of having been frozen. Sweat secretion is absent and sensitiveness is much below the normal. This condition was always noted in patients during the terminal stage of the disease. It does not necessarily proceed from the repeated attacks of the eruption, for it was observed among several who had had but one attack of the erythema. It is indicative of a high grade of infection and of an exhausted resistance. The etiologic factor is here, as usual, not taken into account. The fact that all these lesions

may be mimicked in the insane and neurasthenic by other states, renders determination of the mouldy maize causation a necessity. Ergot, as Siemanns¹ has shown in an investigation of ergotism epidemics, will produce similar states to pellagra, but the dermic phenomena will be in the background while epileptiform mental and convulsion states are predominant. Metabolic disorders like scurvy, resultant on neurasthenia and insanity, predispose to changes in skin and nerve associations.

Diagnosis of erythema pellagrosus is best made from the associated symptoms. Taken alone in the earlier stage it is indistinguishable from the commoner forms of erythema, dermatitis and erythematous eczema. With the advent of the pigmentary and atrophic stage, there should be no difficulty in recognizing the disease. The concomitant symptoms consist in various neurasthenic disorders, loss of flesh, of appetite, depression and diarrhea. Given a patient with a history of periodical outbreaks of a rash affecting the exposed surfaces and accompanied by depression, diarrhea, weakness and loss of flesh, the diagnosis of pellagra is pretty safe.

Agricultural Aspects of Pellagra in the United States. According to C. L. Alsberg,² pellagra is caused by the consumption of spoiled Indian corn by poorly nourished and badly housed individuals. The tendency of the farmer is to harvest his corn before it is fully ripe, and this promotes the tendency to disease in the grain. Moreover, a most important factor is the present faulty method of transportation in bulk. The grain of corn is a live thing. It breathes, consumes oxygen, and gives off CO₂ and heat. The latter increases sufficiently to create ideal conditions of temperature and moisture for the growth of fungi. Corn shipped to the Northeast will have the tendency to ferment checked by the colder climate; if sent South the reverse effect follows. The avoidance of moisture in bulk transit is the thing desired. It is to the interest of the farmer to sell corn with as great a moisture content as possible, for such corn is heavy and will average more bushels to the acre than after proper drying and curing.

(1) Arch. of Psych., B. XII.

(2) N. Y. Med. Jour., July 10, 1909.

When it is loaded into cars it straightway heats up, ferments and spoils, often before it reaches its destination. The dealer who receives such corn naturally often succumbs to the temptation of mixing it with enough good corn so that meal made from the mixture will not be offensive to the taste or smell. The amount of spoiled corn used in this way is very great. The only means to combat this evil is to induce purchasers of corn to pay for it according to its moisture content. The remedy is to cause the corn to be thoroughly dried before transportation.

Eugene D. Bondurant¹ states that pellagra is a toxemia due to eating fermented or damaged corn meal, resulting in gastrointestinal symptoms, with mental changes in the nature of insanity, which cause the patient to be placed in an insane hospital. The disease is more frequent than has been thought in this country, and especially among negroes. The clinical picture of the disease is definite and characteristic, and having been once seen is easily recognized. The skin is affected with an erythematous eruption on face, hands and joints. There is salivation, gastric and intestinal irritation and diarrhea. The nervous symptoms are those of toxic irritation of the cortex and spinal cells.

Leprosy. Leprophobia. Considering the exploitation of leprosy for purposes of advertisement by pseudoexperts in leprology it is hardly surprising that the *Medical Record*² should doubt that there is a science of public health. When health officers in several states became hysterical when a leper escaped from his place of unjust confinement a few years ago; when the officials of another state make prisoners of a retired army officer and his wife because one of them was alleged to have leprosy; and now when a man, whom competent authorities have declared not to be a leper, is imprisoned in the capital of the country because he inquired of his physician if possibly he had leprosy, we wonder whether there is a science of public health. This last mentioned case, in which public interest has been aroused by the recent examination of the victim by a well known dermatologist of New York City, seems to call for

(1) Medical Record, Aug. 21, 1909.

(2) Medical Record, July 19, 1909.

some comment, for it presents a peculiarly flagrant instance of official cruelty inspired by unreasoning fear.

The case is as follows: A man, aged 36 years, born in North Carolina, living there most of his life, served 9 years in the army, about 2 years in the Philippines and a short time in Cuba; in neither of these countries did he see a case of leprosy nor ever hear it mentioned. In June, 1908, he went to work in a pulp mill where he came in contact with a certain liquid made from "black ash," which is very poisonous and irritating. The hands became inflamed, then the face and later the feet. There were a dozen or so in the mill who were more or less similarly affected. On August 18 he went to Washington, D. C., to get relief from the distressing inflammation of the skin. According to his statements the hands and forearms were greatly swollen and also the face, so that the eyes were almost closed; the feet and lower legs were also acutely inflamed. As the physician to whom he had applied was examining him, the patient innocently and foolishly remarked, "I wonder if I have leprosy." The hint was taken and the case referred to the health authorities. The inspector is said never to have seen a case of leprosy, but accepted the patient's interrogative diagnosis, after a hasty examination, and called in another physician who had seen some leprosy many years ago; the latter regarded the case as "strongly suspicious." He excised a portion of the inflamed skin from the forehead and reported the finding of bacilli, "corresponding morphologically with those of leprosy." On this evidence the man was quarantined and has been kept a prisoner since August 21, 1908. So far as can be learned, no further attempt was made to establish the diagnosis, and until the arrival of L. D. Bulkley, of New York, May 9, 1909, no one well acquainted with diseases of the skin had ever examined the patient, although there are numbers of men in Washington perfectly competent to determine the nature of the trouble. At the first visit of Bulkley, the patient was stripped and the case was studied for an hour and a half. On May 30 another similar study of the case was made for three-quarters of an hour. At both of these examinations pieces of skin were punched out and were placed at once in abso-

lute alcohol, most carefully stained, and examined by many pathologists, among them William H. Welch of Baltimore and William H. Park of New York. Absolutely no sign of leprosy was discovered, certainly no leprosy bacilli. A third visit was made June 6. There were then absolutely no signs of leprosy on the face; the nose was aquiline, the lips and ears normal and there were no lesions within the nose or mouth.

Analyzing this case, the *Medical Record* denies the slightest ground for even guessing that the man had leprosy. He went to Washington with an acute inflammatory dermatitis, caused by a vegetable poison and of only 5 or 6 weeks duration. Leprosy would have taken as many years to have involved an equal area so severely. During his imprisonment all this has slowly disappeared, the cause being removed. The whole case seems to be one of official overzealousness, but the excess of zeal is in danger of becoming something worse by the action of the health officer in placing every possible obstacle in the way of the man's freedom. The officials of the New York Health Department have said in writing that he would be admitted here, as, "for some years past the Board of Health of this city has considered that leprosy in this climate is not of so infectious or contagious a nature as to require segregation." The New York Skin and Cancer Hospital has written that the patient "will be admitted to the wards of this hospital whenever he may come," adding "We have had many cases of true leprosy in the hospital, often for considerable periods of time, dating back 20 years, and have never seen reason to fear the disease"; yet the Washington officials not only did not discharge him from custody but doubled the guard around his place of confinement. Even assuming that Bulkley is mistaken, and that the man is really a leper, which, in view of the gradual disappearance of the dermatitis, is scarcely possible, there is absolutely no excuse for depriving him of his liberty.

Leprosy Bacillus and Vaccine. In a paper read before the Philippine Islands Medical Society, M. T. Clegg¹ reports cultivating leprosy bacilli from cultures taken from the spleen of lepers on necropsy. He has succeeded in cul-

(1) *Medical Record*, Aug. 7, 1909.

tivating the bacilli from cultures taken from the ear of live cases, and the technic has been verified so frequently that there can be little doubt that leprosy bacilli are actually grown. A vaccine has been made from these cultures which, when injected into leprosy persons, produces a most pronounced reaction in the leprosy lesions.

Lepra Tuberosa Mimicking Sarcomatosis is reported by J. Kingsbury¹ in a 26-year-old native of Courlander, Russia. Leprosy is endemic there. Six years previous to coming under treatment he had pleurisy. Health was otherwise good. There was no evidence of syphilis. In May, 1906, he noticed that at night his legs would often be swollen. There was no pain, but he had occasional chills. The swelling of the legs increased and persisted for nearly 3 months. About this time lumps began to appear above the shins. At first they were small and few in number, not more than half a dozen. These gradually increased in size, however. Soon new ones appeared on the calves and thighs. Later the arms and forearms became affected, and about 9 months ago a single nodule appeared on the forehead. There had been diminished sensation in the arms and legs for nearly one year. In June, 1908, the man had an acute leprosy exacerbation. There was moderate fever, the lymphatic glands became enlarged, and the left leg was red and swollen. He was admitted to Bellevue Hospital and remained in the erysipelas pavilion for over 2 months. He came under Kingsbury's care shortly after his discharge from Bellevue. He then weighed 125 pounds and was about 5 feet 7 inches in height. He had light hair and the skin on unexposed and unaffected parts was very fair. He was not very well developed, although wiry and fairly strong. There was general though moderate adenopathy.

Physical examination showed the heart and lungs to be in normal condition, and no enlargement of the spleen was made out. No reaction was obtained from the conjunctival tuberculin test. This was employed because marked reactions have been frequently reported in nontuberculous leprosy after injection of tuberculin. Urine and nasal secretions examined for leprosy bacilli gave negative results.

(1) N. Y. Med. Jour., Oct. 16, 1908.

The cutaneous lesions varied in size from papules the size of a pin head to flattened tumors $\frac{3}{4}$ inch in diameter. These were soft and reddish brown in color. There were nearly 40 nodules that were about the size of a split pea on each of the upper extremities. The larger number of these lesions was found on the extensor surfaces. There were about 60 similar nodules on each thigh and probably half of this number on each leg. Several papules on the soles resembled those seen in syphilis. There was a tubercle on the forehead about $\frac{3}{8}$ inch in diameter. It was soft and velvety, but showed slight telangiectasia on the surface. This was the only lesion on the face. On the arms and thighs were numerous minute yellow papules. These for the most part were closely aggregated and many had coalesced. Quite a number of these papules had invaded an old vaccination cicatrix on the left arm. The trunk was free of lesions. There were superficial scars on the right elbow and left thigh, the result of recent trauma. On the legs there were numerous dark pigmented areas that showed the site of previous nodules. Right leg showed slight swelling, and the skin was shiny and bluish red in color. The left leg is now apparently of normal size.

The ulnar nerves were but slightly thickened and there was no contracture of any of the fingers. Peroneal nerves were a little enlarged, but the great auriculars seemed normal. There were but a few areas of complete anesthesia, although sensation was diminished in the forearms and legs. Several areas on the back showed hyperesthesia.

There was no seborrhea of the scalp, but the hair was dry and thin. Probably half of it had been lost. The beard was scanty and the eyebrows, particularly at the outer third, were exceedingly thin. There was hardly any suggestion, however, of the characteristic facies of the disease. Microsections of a nodule excised from the forearm showed large masses of lymphoid and epithelioid cells with many large giant cells. With stained bacteria, the giant cells and many epithelioid cells were seen to be crowded with lepra bacilli.

The Nose in Leprosy. W. R. Brinckerhoff and W. L. Moore¹ state that within recent years it has been main-

(1) N. Y. Med. Jour., Sept. 4, 1909.

tained that the nasal septum is frequently the site of the earliest lesions of leprosy and that in the secretions of the nose the bacillus of the disease is most likely to be found at an early period. When it is not practicable to make a complete physical examination of all individuals of a class suspected of leprosy, the examination of the nasal septum and the bacteriologic examination of the nasal secretions will prove of value by permitting the recognition of the most dangerous type of the disease, and is therefore worth while even if it does not reveal all cases of the disease in those who came under observation.

Leprosy in the United States. According to B. A. Penrose,¹ the Leprosy Commission of the Marine-Hospital Service obtained official information of 278 cases of leprosy in the United States, 73% of which were at large, and only 72 provided for by the states or cities in which they were located. One hundred and forty-five were born in the United States, 120 in foreign countries, and 13 were of unknown origin. They claim that many were infected in the United States. Twenty-two of the cases came from Norway, 11 from Iceland, 8 from Sweden, 12 from Germany, 12 from the Bahamas, 6 from Cuba, 4 from other West Indian islands, 3 from Mexico, 6 from Ireland, 3 from England, 3 from France, 3 from Italy and one from Spain.

Considered from the standpoint of the states in which they were found, Louisiana furnished 155; California, 24; Minnesota, 20; Florida, 24; North Dakota, 16; New York, 7; Illinois, Missouri and Mississippi, 5 each; and other states a lesser number or none at all.

Tuberculosis. K. von Ruck² reports that a patient admitted to his sanatorium had an irregular *tubercular ulceration upon the left labium* which had existed several months prior to admission. The patient refused to have it curetted. The ulcer reacted locally under tuberculous treatment and healed.

Skin Hyperalgesia and Pulmonary Tuberculosis. According to W. C. White and K. H. Van Norman,³ hyperal-

(1) Marine-Hospital Reports, 1908.

(2) Wingate Sanatorium Reports, 1909.

(3) Arch. of Int. Med., July, 1909.

gesia to pain, heat and cold sensations is present over active pulmonary tuberculosis, corresponding closely to the pulmonary distribution of the disease. It depends upon the involvement of the lung and not of the pleura. With arrest of activity, it disappears.

Variola. I. R. Baueroff¹ analyzes the initial stage of 444 cases of variola. The length of initial fever in 74 cases was 4 days; in 231 cases 3 days; in 111 cases 2 days; in 21 cases one day. In 7 cases initial fever did not occur. Of 916 cases the initial symptom was backache in 234; headache in 255; general pains in 107; nausea and vomiting in 175; chills in 122; vertigo in 76; sore throat in 14; cough in 19; menstruation in 10; faintness in 6. While the onset was seemingly abrupt as a rule, in many cases malaise existed for days.

Chill was often the first indication of a disturbance of temperature. Immediately following the chill a rapid rise of temperature took place, and as a rule remained nearly at its original maximum height for about 3 days with very little daily remissions. The drop to normal was sudden as a rule except in the severe cases. This drop was definitely related to the appearance of the eruption so as a general rule the complete appearance of the eruption was accompanied by a complete absence of fever. Pain might be said to be the most constant symptom aside from fever. The pain was more often referred to the head and back, but was frequently general and indefinite. The backache was usually definitely located in the small of the back. Sometimes it was dull but more often acute and steady. It sometimes radiated to the loins and down the thighs. In the more severe cases it often continued after the complete appearance of the eruption and lasted for 6 or 7 days. Sometimes backache was the sole symptom. Headache, which was more frequent than backache, varied from an indefinite feeling of malaise to a severe, agonizing and sharp pain. It was usually more severe than would accompany a similar temperature in other diseases, and was more often localized in the posterior and cervical regions. Often there was severe pain in the upper chest and

(1) Southern Calif. Pract., April, 1909.

between the shoulder blades, and sometimes deep hypogastric pains were present.

The infection acted as a profound intoxication to the nervous system. Even the light cases complained sometimes that they disliked to go to sleep because of the bad dreams that they had. Delirium was sometimes present, and at times lasted through the initial fever. Children sometimes had convulsions and vertigo was often marked, and at times was mistaken for alcoholic intoxication. Syncope in strong and ruddy persons also existed, and in several persons the power of speech was impaired. As a rule marked insomnia existed, but at times somnolence was present and patients were dull and stupid when awake. Cough and sore throat appear as an accompaniment rarely. Epistaxis, at times severe, was occasionally present. The tongue was usually covered with a thick yellow coat and the appetite lost. Nausea and vomiting occurred in many cases. Constipation was the rule. In women, menstruation often took place out of time.

Physical examination during the initial period showed nothing abnormal as a rule. Sometimes, however, splenic enlargement existed, and rarely initial rashes appeared on the parts of the body which were subsequently free from the specific eruption. More often the face was suffused and red until the eruption appeared.

Quinin Erythema. W. Gripper¹ reports the case of a woman known to be very susceptible to quinin who took two-dram doses of a preparation containing one-quarter of a grain to a dram. During the day the rash appeared and spread over the entire body. She was advised to continue with the preparation in the hope that she might become accustomed to it. During the next two days the condition remained the same. The condition was worse at night. She had no headache and practically no eruption on the face. The drug was then stopped. On the fourth day the hands, legs and ankles were greatly swollen, the palms red and shining, while the fingers and toes were stiff, feeling numb and distinctly cold to the touch. Bran-baths, etc., gave no relief. By the seventh day desquama-

(1) British Medical Jour., July 3, 1909.

tion began on the hands and arms, extending to the trunk and legs, the epidermis separating in large strips and flakes with almost casts from the toes. During the fourth week, this was completed and the appearance was like that of scarlet fever. Sodium salicylate had similar effects on the patient. There was hence a special idiosyncrasy.

Dermic Disorders in Hodgkin's Disease are discussed by J. D. Bloom.¹ The skin in a few instances becomes the seat of nodular deposits more frequently on the front of the chest and infrequently in the neck and face. These growths take origin in the true skin and show progress by the condition of exudation, of which mention has been made. The subcutaneous tissue contains these growths in great part, and they occasionally become pedunculated. These multiple growths and tissue changes are painless, save the splenic ones, which at times occasion radiating pains in the back over the splenic area.

Hypertrichosis is divided by J. D. Bloom² into the congenital and acquired. The congenital occurs more often in unusual situations. The palms and soles of the feet, the backs of the last phalanges of the toes and fingers, the inner surface of the prepuce and labia majora, glans penis and both upper and lower eye-lids remain free. Hair rarely grows on these parts. The texture of the hair varies in this perversion in the different anatomic parts. The growth is continually toward the coarser and becomes of darker hue until fully developed. It is most coarse in the beard locations. Its direction of growth is usually downward, and in both posterior and anterior portions of the body away from the line of the middle. In this form the teeth are defective.

It may be an excessive growth in locations where it is normally found, or development of hair in regions commonly spoken of as hairless. These parts may be furnished with lanugo under ordinary conditions or with early pubertal hair or be of abnormal development. By heredity alone it cannot be explained, nor by theories of nervous effect, maternal impressions, atavism, fecundation of the female by a hairy animal, etc. An acquired form

(1) Amer. Jour. of Derm., August, 1909.

(2) Amer. Jour. of Derm., February, 1909.

favored by local conditions that determine a congestion to the part must also be recognized.

Hair may exist over the sternum and shoulders in excess. Women have had hair trailing on the ground. This has been met with in women with beards. In the case of an 18-year-old girl the condition, which had existed since puberty, simulated a pair of drawers extending from the waist line to a margin just above both knees in both posterior and anterior aspect. The patient, reserved and modest, had for a time marveled at her condition. The quest for relief was made as an ulterior effort to rid herself of what she had considered a curse.

Hereditary Hemorrhagic Telangiectasit. according to F. M. Hanes,¹ manifests itself in localized dilatations of capillaries and venules, forming distinct groups or telangiectases which occur especially upon the skin of the face and nasal and buccal mucous membranes, giving rise to profuse hemorrhage either spontaneously or as the result of trauma.

Three factors seem of etiologic import; namely, heredity, repeated traumatisms, and abuse of alcohol. Of these three factors the hereditary tendency to the disease is by far the most striking and constant. There is no instance of a patient suffering with this affection and having children all of whom were free from the disease. Males and females are affected alike and both are equally capable of transmitting it to their offspring.

Repeated traumatism plays a part in the telangiectases. The ears, the cheeks, the mucocutaneous junction of the lips, the nasal and buccal mucous membranes, the finger tips—these are the sites of predilection and these are obviously the points most subject to frequent slight traumatisms.

In most cases neither positive nor negative evidence of alcoholic abuse exists. Osler's first 3 cases are exceptions. The first 2 were sailors, much given to those alcoholic habits so common in sailors; the third patient came from Kentucky. One patient has many more telangiectases than any other member of his family. He earns a fair wage

(1) Amer. Jour. of Derm., June, 1909,

and "drinks when he has the money." His uncle also had a profusion of facial telangiectases which he, with commendable candor, called "whiskey bumps." The vasodilator action of alcohol upon the peripheral capillaries may be mentioned with relevance in this connection. Upon inspection of the red spots characteristic of the disease it becomes obvious that they are true vascular formations and not blood extravasations. They blanch on pressure and regain their color when the pressure is removed. Those occurring upon the face are very prone to show the typical spider-nevus formation.

Hemorrhage is the one constant symptom of the disease and the source of all other symptoms. It takes in the great majority of cases the form of epistaxis, but this symptom may be entirely wanting. The hemorrhages always originate in telangiectases. Next to the nasal telangiectases those on the lips and buccal mucous membrane most frequently cause bleeding. The hemorrhages are astoundingly profuse; patients describe the blood as spurting from the injured spot. The nose may bleed freely several times each day, and while lay descriptions of hemorrhage are to be taken *cum grano salis*, personal observation upon several occasions has convinced Hanes of the severity of the epistaxis. Secondary anemia follows as a natural sequence of the frequent and profuse hemorrhages, and the concomitant symptoms of palpitation, breathlessness and swelling of the ankles become painfully evident. The hemorrhages produce anemia, the anemia conduces to hemorrhage, and thus a vicious cycle is inaugurated, each symptom playing the double rôle of cause and effect.

Multiple telangiectases constitute the sole characteristic sign of the affection. Their occurrence is most constant upon the nasal and buccal mucous membranes and the mucocutaneous junction of the lips. They have been observed upon the skin of the face, hands and feet, upon the scalp, the conjunctivæ, and once postmortem in the gastric mucous membrane. They begin as dilations of the capillaries, having a bright red color. As they increase in size the venules participate in the ectasia, giving the cutaneous telangiectases a violaceous or purple color. The telangiectases of the mucous membranes are always brilliant red.

The small telangiectases do not project beyond the surrounding structures, but as they increase in size they tend to become more elevated. They never attain to a great size; a split pea seems to represent approximately their maximum development. They are true developmental faults, beginning in early childhood, frequently causing increasing annoyance during adolescence and becoming serious menaces to health toward the evening of life.

The therapeutic indications are clear. Destruction of the culpable telangiectases should be the first consideration. A bead of chromic acid fused upon a probe is an excellent cauterizer and its action can be checked at any time by the application of an alkali. Repeated cauterizations may be necessary, especially within the nose, for here the bleeding frequently takes place from very small telangiectases which are easily overlooked. The patient should be instructed to report for treatment, if possible, each time the nose bleeds, for it is only by the repeated destruction of small telangiectases that one can check the epistaxis and at the same time avoid widespread cicatrization of the mucous membranes. It is futile to treat the secondary anemia so long as the hemorrhages continue. Remove the cause and the effect is readily amenable to treatment.

Pathomimic Scars is a title applied to artificial dermatoses, especially those provoked by the neurotic. Apert and Brac have recently reported the case of a girl of 14 who presented on the left thigh and leg scars voluntarily made by the application of commercial potash (concentrated lye). On the left thigh there were recent scars from the opening of abscesses also voluntarily produced. On the front of the right thigh there was a large, old scar also due to an application of lye. On the lower limbs, the left arm and left mastoid region there existed large scars, either round, linear or keloidal, having the same characteristics as the preceding ones, but it could not be ascertained whether they were artificially produced. This young girl presented no symptoms of hereditary syphilis. Intra-dermo reaction, in her, was clearly positive. She was subject to numerous attacks of hysteria and had dipr-



PLATE I.

HERPETIC ERUPTION ALONG COURSE OF ULNAR NERVE.

Two photographs taken five days after appearance of eruption; patient, married negress, aged 23; complained of severe pain along course of ulnar nerve twenty-four hours preceding the outbreak. (From the *Dermatologic Clinic, Post-Graduate Medical School, Chicago*.)

nal and nocturnal incontinence of urine. Her parents were alcoholics and her brother an epileptic.

Dermatitis Herpetiformis with Grave Eye Lesions. Balzer and Sevestre¹ have had a patient who had the painful polymorphous dermatitis of Dühring. The history of the patient furnishes two peculiar facts that are worthy of note. It began subsequent to a mercurial application which had produced a stomatitis. The dermatitis appeared a few days later. In addition to this the patient presented ocular symptoms of such a nature that eye-sight was almost completely lost. There were bullæ on the free borders of the lids, but none on the conjunctiva. At the time of the report he presented a symblepharon that was internal and external as well as bilateral and an opacity of the cornea which interfered considerably with vision. It would appear that attention has not yet been called to these ocular complications of the disease.

Nail Growth. A. M. Bloch² has investigated nail growth. With a sharp file he makes two furrows in the shape of an X, then with wax he takes an impression of the finger and of the nail. This he uses as a mold into which he pours plaster of Paris and thus obtains a model of the finger and of the nail as well as of the furrow that was artificially made. A month later, a new impression is taken and then by means of a pair of dividers the distance is taken from the groove to a well marked furrow on the skin which is as plain on one model as on the other. In this manner the growth of the nail may be determined.

This method may be applied to the nails of the toes as well as to those of the fingers. The author calls attention to the fact derived from a number of old observations, confirmed by recent ones, that the growth of the nails is a function of the individual's age. It varies from single to triple, being less than 0.1 mm. below 5 years, increasing to 0.14 mm. from 5 to 30 years and falling to 0.04 mm. per day toward 66, 80 years and more. When the growth of the nail of the big toe is studied, in comparison with the nails of the hand, there is noted a lessening of rapidity, a function of the age which does not follow a

(1) Amer. Jour. of Derm., June, 1909.

(2) Amer. Jour. of Derm., May, 1909.

constant proportion. In the young, the growth of the toe-nail varies between one-half and one-third of the growth of the finger-nails, whilst in the aged the difference is not quite so great. At about 80 or more there is an average of 0.05 mm. daily for the hand and of 0.04 mm. for the foot. The trophic activity of the lower limb is better preserved than that of the upper, which is explained by the fact that healthy aged individuals use their legs and hardly employ their arms. An examination of the muscles will testify to this fact. Muscular atrophy is more marked in the thoracic limbs than in the abdominal. Nail growth does not vary with the seasons.

Dermatoses and Acidosis. According to H. R. Harrower,¹ many dermatoses are associated with acidosis. Acne, herpes, eczema, pruritus and many other conditions seem, from results obtained in their treatment, to be often due to this condition. This is at least true in some cases, for when the offending cause is removed and the poisonous substances present are properly neutralized and eliminated from the body, the offending skin lesions disappear without further attention in the majority of cases. The excessive acidity which is so common is due to certain acid substances manufactured during the process of the depraved metabolic conditions practically always associated with intestinal putrefaction.

The most common dermatosis—acne vulgaris—is almost invariably associated with a greater or less degree of auto-intoxication, as probably the most frequent exciting cause is a disturbance of digestion with an accompanying constipation. In these cases an examination of the normal products of metabolism eliminated in the urine very often makes plain the way for successful treatment.

Conditions previously assumed to be due to some basal neurotic difficulty, as, for example, herpes, will be found in the majority of cases to evidence in a marked degree the findings associated with autointoxication, particularly to show an excessive degree of acidity. One case of herpes zoster of very long standing showed the following urinary findings: Amount 1,250 c.c., specific gravity 1.014, total

(1) Amer. Jour. of Derm., May, 1909,

solids 40.75 grams, acidity 78 degrees, acid units 97,500, urea 1.1%, indican much, with traces of indol-acetic acid. Thorough elimination by the use of calomel in broken doses, a saline each morning, with intestinal antiseptics and neutralization of the acidemic condition, resulted in a remarkable amelioration of the condition. The continuation of the local remedy which had been previously prescribed for this patient, together with this modification of the systemic acidity, caused a serious condition of long standing to disappear within a month. When the urinary findings show an excessive degree of acidity and this is brought down to normal by the judicious use of alkaline remedies, guided always by the acid index, success will be attained.

Hematuria after Purpuric Eruptions is discussed by R. del Vecchio,¹ who cites the case of a 12-year-old girl with influenza complicated with follicular tonsillitis. This was followed by a purpuric eruption on the lower extremities. In addition hematuria occurred in crises; with each one was renal albuminuria accompanied by a fresh eruption and gastroenteralgia. Hematuria became less frequent. The general state of the patient was always a good one. Repeated examinations revealed albumin always proportional to the amount of blood, a normal elimination of urea and the presence of epithelial, granular and hyaline casts. There existed an absence of neoplastic elements and tubercle bacilli. The specific gravity varied from 1.011 to 1.020, the daily amount from 1,300 to 1,500 c.c. Vacchio accounts for the condition by a disseminated vasomotor stasis of toxic-infective origin due to a process analogous to that which occurs in disseminated cutaneous stasis and in the purpuric eruption.

Diagnostic Skin Reaction in Acute Infections. In determining these L. K. Hirshberg² employs the following procedure: The hairless portion of the arm or forearm is cleaned with ether. No alcohol, soap, water, or other disinfectant is used. Five or more scarifications are made (the number is dependent on the varieties of vaccines

(1) *Riforma Medica*, January, 1909.

(2) *N. Y. Med. Jour.*, Sept. 18, 1909.

used) with a small metal screw-driver like lancet. The blade is 0.3 centimeter broad and half moon shaped. This makes an ideal scarifier when given the rotary motions of a screw driver. It is so tempered that the half moon blade may be repeatedly sterilized in an alcohol flame without injury. The scarifications are made in two parallel columns an inch apart. Each time between vaccinations the scarifier is sterilized in the alcohol flame, thus preventing contaminations or mixed vaccines. The ends of the tubes containing the various vaccines are wiped with sterile gauze to clear away the spicules of glass. The usual amount of the various vaccines taken has been 2,000,000 gonococci; 40,000,000 of the *Staphylococcus aureus*; 4,000,000 streptococci; 8,000,000 colon bacilli and 4,000,000 typhoid bacilli. In each case the amount corresponds to 0.1 c.c. of the stock vaccines of manufacturing laboratories. The skin is scarified with sterile water, a salt solution of physiologic strength, or 50% glycerin and 1% phenol in isotonic salt solution. This is used as a control. Usually five other vaccinations are made. The types of organisms used depend upon the suspected infection. A fairly good reaction shows a slightly reddened area in the neighborhood of 5 mm. in diameter with slightly tense, firm and hard center. A moderately good reaction shows the hyperemic area about 10 mm., persistent and distinctly infiltrated. A very good reaction shows a distinctly edematous site about 25 mm. or more and marked infiltration and hyperemia.

CHAPTER II.

SPECIAL DERMATOSES.

Dermatobia Noxialis Dermatitis. J. D. Manget¹ reports the case of a patient infected by *Dermatobia noxiadis* by being bitten by flies while bathing in Mexico. The symptoms were general malaise, slight fever and small lesions on the back and shoulders, which caused sharp lancinating pains at times. Six weeks after exposure there were no malarial parasites found in his blood. In the five lesions on the shoulder and arm were found motile larvæ, with branched hooklets on the head, which caused the intense pain. Recovery soon followed the removal of these.

Morphea-like Epithelioma. M. B. Hartzell² reports 3 cases of morphea-like epithelioma. The first patient was temporarily cured by x-ray treatment, as was the patient in the second case, which was of interest on account of the early age at which the disease appeared, the patient being only 24. The third case was of more special interest because it was microscopically diagnosed, this not having been permitted in the other two. In all three the disease began as a smooth slightly elevated plaque, of a yellowish-white or yellowish-pink tint, over which numerous small blood vessels ran, gradually increasing in size and after some time developing ulceration with usually sharp margin. The progress was slow without marked subjective symptoms. Stellwagon, who has the only text-book reference to the subject, curtly alludes to the possibility of epithelioma resembling morphea. Crocker refers to rodent ulcer, unique in his experience, which Hartzell thinks must have been this sort of epithelioma.

Dermatitis Pediculoides Ventricosus. For 8 years cases have occurred in and about Philadelphia¹ of a new skin

(1) Medical Record, June 26, 1909.

(2) Jour. Am. Med. Assoc., July 24, 1909.

disease which appeared in epidemic form, in the summer, the small epidemics being localized to certain districts, even to particular houses. The eruption first appeared like simple urticaria; in the middle of the wheals, however, soon appeared minute vesicles, the latter becoming pustular. The onset was sudden and the duration several weeks, during which time the itching was so intense that patients often were obliged to abandon their occupations. The etiology was quite obscure until recently when an outbreak among sailors on a yacht in the harbor of Philadelphia attracted the attention of Goldberger, who started an investigation with Schamberg. Nearly 125 cases were investigated, these coming from the crews of 5 boats and the inmates of 20 dwelling houses. The first point was the history of recent handling or sleeping on new straw mattresses. Further investigation proved that all of these mattresses had been bought from 4 dealers in Philadelphia, who obtained their straw from a common source in New Jersey. Volunteers who exposed their bare arms between two of these mattresses, or slept upon them, promptly developed the disease. Some of the straw was then sifted and the dust collected in Petri dishes. One portion was placed in the axilla of a volunteer and in 16 hours caused the characteristic eruption. Another portion, after exposure to chloroform, when placed in the opposite axilla appeared to be quite innocuous. On careful search of the dust minute mites were discovered, 5 of which were obtained and, when placed on the skin under a watch crystal, produced 5 typical lesions of the disease. The mite was diagnosed at the United States Bureau of Entomology as being very close to or identical with *Pediculoides ventricosus*. As proper treatment of the infected mattresses with sulphur, steam, or formaldehyd in a vacuum chamber will kill the mite, the prophylaxis against this disease is now comparatively a simple matter.

Condyloma Acuminata, according to P. Stancanellia,² is chronic proliferation which begins in the mucous corpuscles of Malpighi, resulting in infiltration and proliferation of

(1) Jour. Am. Med. Assoc., July 24, 1909.

(2) Glor. Intern. delle Scienze Med., May, 1909.

the papillæ; a new formed tissue of embryonic type arises, which tends to organization and histologic differentiation. Its onset is in the mucous bodies. The tissue is of hyperplastic type which tends to organization. It is furnished with a peripheral nervous reticulum, fibrillar and ganglionic. Bacteriologic and bacterioscopic researches indicate that it is not caused by bacteria. It is due probably to an exogenous inflammatory chemical substance penetrating through the epithelial strata.

Infective Warts. J. Morton¹ reports a case in which warts appeared in several members of a family under circumstances which support the theory of their infective nature. The family in question had in their house for some months a maid who suffered from numerous warts on the hands and arms. Shortly afterward it was noticed that the children, three in number, had all developed warts on the adjacent sides of two fingers one after the other, and in such exact apposition to one another as to suggest infection by contact, a conclusion which is still further confirmed by the additional observation that now one child who has a persistent habit of biting these fingers, has developed two fresh warts on the upper lip, and one inside the mouth on the anterior surface of the gum. The influence of suggestion in production of warts should be excluded ere the infective element can be positively accepted. In neuropaths warts may be produced and removed by suggestion. One of the functions of the village wise-woman or "white" witch was to charm away warts. There is strong evidence of such suggestion. (Tuke, "Influence of the Mind.")

Cheilitis exfoliativa is a condition allied to Paget's disease of the nipple, which, according to M. L. Ravtch,² is a keratosis characterized by excessive epidermic formation and cornification. He reports 4 cases. One was in a 39-year-old stockman who denied syphilis but had had leucokeratosis buccalis for 5 years. The lower lip presented cheilitis exfoliativa, which cleared up under a 15% solution of silver nitrate applied by cataphoresis. This was

(1) British Med. Jour., Nov. 11, 1908.

(2) Jour. Am. Med. Assoc., Nov. 14, 1908.

without effect on the leucokeratosis. The second case was that of a 46-year-old dry goods man who was an inveterate smoker. He denied venereal disease. For 2 years his lower lip felt tight and itchy. At first he thought he had chapped lips, but when he noticed exudation, crusting and exfoliation, he consulted several physicians, and one of them pronounced the growth malignant. On examination, Ravtch found it cheilitis exfoliativa. The mucous and salivary glands of the mouth were not affected. After 14 x-ray treatments the patient was discharged cured. The third case was that of a 35-year-old man whose history was good. He had always enjoyed good health. The symptoms were identical with those of Case 2, except that exfoliation was more pronounced. Heidingsfeld pronounced the disease lupus erythematosus. The examination, which was made in the evening, was a hasty one. Ravtch applied a 15% solution of silver nitrate, followed by Lassar's paste (the one with salicylic acid) daily. Later on he used the x-ray. The patient improved. A whisky drummer complained of dryness in the mouth and contraction of the lower lip. The symptoms were the same as in the previous cases except that the muciparous glands were more involved, the exudation and crusting more pronounced. As the patient greatly objected to x-ray treatments, Ravtch used tincture of iodine by cataphoresis and Lassar's paste as a daily application. The patient showed great improvement. There is a marked tendency to relapse.

Dermatitis from Yellow Moths. According to D. Saraguchi,¹ an eruption due to yellow moths is urticaria-like with severe itching. In those cases in which the eyes are affected there is a congestion of the conjunctiva as well as a redness of the eye-lids. The skin is never affected in any parts except those which were touched by the powder from the moths. The skin affection does not spread. The duration of this disease is from 6 to 13 days, when it disappears spontaneously.

Dermatitis Venenata from Hair Dye. J. Kingsbury² reports the case of a 38-year-old married alcoholic in good health, who when first seen had an erythematous eruption

(1) Sei-I-Kwai, April, 1909.

(2) Amer. Jour. of Derm., February, 1909.



PLATE II.

TINEA CIRCINATA.

An eruption of two months' duration occurring in a 33-year-old German worker in a soap factory; characterized by circinate lesions most marked on pectoral and inguinal regions. (*From the Dermatology Clinic, Post-Graduate Medical School, Chicago.*)



PLATE III.

ACUTE PSORIASIS.

Eruption of three weeks' duration; patient, a bartender, aged 33, had an eruption similar in character three years ago; interesting feature of this case is its wide distribution, its acute character and its occurrence after excessive alcoholism. (*From the Dermatologic Clinic, Post-Graduate Medical School, Chicago.*)

on the neck and face and complained of itching and burning. Hair showed evidence of artificial coloring and when questioned regarding the possible cause of the eruption the woman admitted that it had appeared shortly after the application of a new hair dye. An appropriate lotion was given at this time and the patient was cautioned against the continued use of the "regenerator." Another application was recently made, however, and it was followed almost immediately by a very severe dermatitis on her forehead, cheeks and neck. The eruption was vesicular in character and exuded a thick serous fluid. Eyelids became edematous and there was considerable thickening of the skin on the forehead and the neck.

Vitiligo in a 46-year-old negress is reported by J. Kingsbury.¹ About 2½ years before she noticed small white spots on her neck and shortly after similar ones developed on her face around the eyes. These rapidly increased in size and new patches appeared on the trunk, extremities and scalp. At present over half of her skin is white and there is white hair over the patches on the scalp. Although the woman is of pure negro blood there is an appreciable increase in the deposit of pigment at the border of several of the patches.

Molluscum Contagiosum. F. C. Knowles² reports that of 350 children admitted to a Philadelphia hospital there were 59 cases of molluscum contagiosum. Thirty-six of the patients were girls and 29 boys. The age was between 7 and 2 years. More than one area was involved in 27 of the cases. The eyelids were attacked in 22 cases; the chin in 6; the cheeks, right, left or both were involved in 11 cases; the forehead was the area of predilection in 11; the nose in 9; the cutaneous surface of the lip in 5 cases; the neck, anterior surface, in 5; the posterior surface of the neck in 3 cases; the left ear in 2; the dorsal surface of the right hand in 4 cases; the middle of the back in one case; and in one case, the left thigh was the site of attack. In one case, the vermilion border of the lower lip was involved by two small, pinhead sized lesions. Two of the

(1) Amer. Jour. of Derm., February, 1909.

(2) Jour. Am. Med. Assoc., Aug. 28, 1909.

patients had mollusca on the mucous membrane of the lip. A severe conjunctivitis was produced in one of the cases by a molluscum on the edge of the eyelid causing friction. One lesion was present in 19 of the cases; two in 12 cases; three also in 12 cases; four mollusca in 4 cases; five lesions in 2 cases; six in 4 cases; one patient had 7 lesions; and in five children there were, on each, 12 mollusca. The lesions were mostly from small to large pinhead in size; one molluscum was, however, pedunculated and cherry size. The author in conclusion remarks that molluscum contagiosum usually attacks the face, in a great majority of cases on, or in close proximity to, the eyelids. Children are more susceptible to the disease than adults.

Cysts of the Peliosebaceous System are, according to A. R. Robinson,¹ divisible into horn cysts and mixed or sebum cysts according to the comparative composition of horn cells and sebum in individual cases. As all the cyst formations appear to be associated with a hyperkeratosis follicularis, a pure sebum cyst cannot exist, but a pure horn cyst may exist without the presence of sebum. A horn cyst is composed of horn cells arranged usually more or less in a concentric manner even when in immediate connection with the common excretory duct and also when located outside this structure, and especially when in the latter situation. In shape they are cylindrical or egg-shaped when in a follicle, and roundish when in the cutis. The presence of a dark point corresponding to a follicle orifice shows the seat of the lesion in that instance, but horn cysts can communicate with the common excretory duct and yet the follicle orifice be not seen with the naked eye, not from obliteration of the duct but from the lateral location of the cyst to the follicle changing the normal relations. The absence of the macroscopic follicle orifice, in connection with a small, hard, whitish, pearl-like body, is no proof that the condition is pure milium as separate from follicle horn cyst or from the comedo condition. The view that in every case of horn comedo there is a condition of hyperkeratosis of the general cutaneous sur-

(1) N. Y. Med. Jour., June 5, 1909.

face or of the orifice of the excretory duct at the point of exit is not always true, but is probably true of the majority of cases. The cyst is a consequence of this process extending downward to the middle third of the follicle and is the source of the excessive amount of horn cells. The condition is not one of simple retention but the hyperkeratosis can commence within the follicle neck, as is the case where it is impossible or very difficult to detect an excretory duct opening in relation with the cyst, or where the duct orifice is quite narrow and apparently normal.

A pure horn cyst can exist in the follicle neck with a normal condition of the sebaceous gland proper. The small, milium-like bodies are observed, although very rarely in cases of chronic lichen planus. This condition has been observed in other diseases in which there is an active participation of the corneous layer, as in ichthyosis. Horn cysts can occur as small microscopic bodies in the follicle or as black points at the orifice or as pearl-like bodies shining through the skin; these latter are usually called milia. Whether all horn cysts are primarily in connection with the follicle duct or whether those showing no duct orifice in the skin over them are extrafollicular primarily or secondarily has been studied by Robinson in a considerable number of lesions, and he finds that horn cysts may be connected with a follicle and yet no orifice be detected satisfactorily by macroscopic examination, that is, such formations can appear as milium bodies as these are usually defined. In this case the duct orifice is not dilated and lies to one side and partly beneath an apparently normal epidermis. The smallest comedones lie in the follicle neck, the medium sized in the middle part of the duct, and the largest occupy the greater part, if not all of the degenerated follicle.

Acute Dermic Necrosis. Carey Coombs¹ reports this in a woman. It began with intermittent fever, pain along the course of the sciatic nerves, followed after a few days by the appearance of bullæ, like those of ecthyma, near the tuber ischii. These bullæ formed sores which healed in the course of 3 months. Later a bulla appeared on

(1) British Medical Jour., Aug. 14, 1909.

the inner side of the right knee, and in the course of 2 months the whole skin was gone from the right leg. On some days more than a square inch of skin died. The process usually began by serum under the epidermis at the growing point of the necrotic area; the cutis vera died in a few hours; when it was cut off granulations were found growing beneath. Eighteen months after the disease started the whole surface had skinned over. Some six months later the skin began to die again, and the patient's temperature was above 99 for 25 weeks, the highest being 104. Treatment consisted in quinin and iron throughout the illness. Opium was given at night and added to the lanolin ointment containing tincture benzoin. Boric acid in carbolic solution was used at first and iodoform was added later, and the edges of the wound were painted with hydrogen peroxid. At the onset of the second attack the sores were ionized by placing the positive electrode of a battery over layers of lint soaked in 2 per cent. zinc sulphate. The hydrogen peroxid and iodoform lotion, however, had a better effect. Persistence of high temperature, appearance and progress of the sore, and the fact that the first nurse had to leave because her hands became infected, suggested a bacterial cause, make the case peculiar. Syphilis and tuberculosis might be dismissed, as the patient and her children had never shown any tendency suggestive of either. Diabetes is, however, not excluded.

CHAPTER III.

THERAPY OF THE DERMATOSES.

Mercurial Baths in Child Furunculosis and Pemphigus.

A. Reiche¹ urges Lewandowsky's procedure of driving staphylococci from the horny dermic layers by profuse sweating. They are then killed by a bath of 1 to 10,000 solution of mercuric chlorid. The child is first given a hot bath, then the pack, with warm drinks, and, from 3 to 5 grains aspirin. The furuncles are opened and sponged in the bath, the body lightly rubbed. The child is then rinsed off, wiped dry, and dusted with talcum. This procedure is repeated for 2 or 3 days, the loss of fluids being compensated by plenty of warm drinks. The children tolerate the sweating and baths well. The furunculosis was cured by the end of one or two weeks. The general health improved much under the cautious diet. This treatment has proven successful even with frail infants having general furunculosis. The same method has been applied with excellent results in acute pemphigus of the newborn, supplemented by application of 5 parts ichthyol and 5 parts glycerin in 100 parts water.

Scarlet Red for Epithelial Granulation. J. S. Davis² has treated 60 cases with scarlet red ointments of 2, 4, 7, 8, 10 and 20% strength. The base was vaselin. Sterilization caused the color to darken, but this did not affect the stimulating power. Clean, healthy granulations should be bathed with boric solution and dried. If the granulations be unhealthy, hydrogen peroxid is used before boric solution. Free use of silver nitrate will down exuberant granulations. The skin surrounding the defect should be anointed with some bland ointment up to within 1 cm. of the edge. Since this has been done the irritation has been

(1) *Therap. Monatshäfte*, May, 1909.

(2) *Johns Hopkins Bull.*, June, 1909.

to a large extent eliminated. The scarlet-red ointment may be applied over the whole wound if it be small, or simply to the growing epithelial edges. Whichever method be chosen, it is best to apply the ointment on perforated old linen, to which the granulations will not adhere, and which allows the escape of secretions and thus prevents maceration. When applied to the edges, the old linen should be used in narrow strips with a thin layer of the ointment. Another satisfactory method is to apply a thin coating of the scarlet red ointment to the wound edges with a camel's hair brush, when the edges are dry. Then either cover with strips of old linen or expose to the air. This is useful in the partial skin-graft cases, and on small wounds, as the ointment can thus be placed accurately and the amount regulated. The portions of the wound not covered by scarlet red may be dressed as seems best, or may simply be exposed to the air under a cage. A light dressing of sterile gauze secured by a bandage completes the procedure.

The dressing should be removed within 48 hours, 24-hour intervals being preferable, and replaced by some bland ointment, such as zinc or boric ointment. After the same interval has elapsed the scarlet red dressing should be replaced. There were 60 cases treated. Of these 44 were males and 16 females, the youngest being 2 years old, and the oldest 76 years. Duration of the lesions, a few days to 15 years. The cases were grouped as follows: Partial skin grafts, 7 cases; ulcer following operation for infection, 10 cases; ulcer following burn, 11 cases; traumatic ulcer, 10 cases; specific ulcer, 8 cases; varicose ulcer, 7 cases; ulcer following Copping operation for ingrown toe nail, 3 cases; bedsore, 2 cases; miscellaneous ulcer, 2 cases.

The general health of the patient seems to have some bearing on the stimulating effect of the scarlet red, which is distinctly less marked in nephritic and diabetic cases. The age, on the other hand, has little or no effect. The rapid-growing epithelium is thick and at first a bluish-red in color with an opalescent spreading edge. Venules of considerable size can be seen close to the surface. The color and the enlarged vessels soon disappear, however,

and the newly formed tissue rapidly assumes the color and characteristics of the normal skin. A section through an area thus healed shows practically normal skin. As a rule, after a short time the skin becomes freely movable over the underlying tissues.

The exact strength and combination of the ointment to be used on different types of wounds can hardly be dogmatically stated, as experience is necessary for this knowledge. However, a few general observations may be of advantage. The 8% ointment is used unless especially contraindicated. In some cases which were sluggish to the 8, 20% ointment has caused rapid stimulation to the edges. Davis does not advise the constant use of the 20% ointment, as on several occasions it has proved too irritating in spite of all precautions. It is of value now and then, although its action should be carefully watched. On several wounds which were nearly closed, the pure scarlet red powder was dusted on the uncovered area, after protecting the surrounding skin. It had a marked drying effect and caused no irritation. When the wounds are covered with unhealthy granulations, and the discharge is profuse and foul smelling, the scarlet red in iodoform ointment, or balsam of Peru, or blue ointment is very efficacious in cleaning up the granulations, and at the same time stimulating the epithelial growth.

Tincture of Diseased Maize in Psoriasis and Pellagra. J. J. Watson¹ reports a case in which a tincture of diseased maize given for experimental purposes to a psoriatic patient cured the psoriasis.

The author states that it is also of value in the treatment of pellagra. He reports that in 10 cases the following symptoms followed in varying combination the administration of tincture of bad maize: Diarrhea, increased appetite, soft feces, revulsion to food, weakness, lassitude, erythema, desquamation and skin lesions. There was also a pronounced effect on the heart and kidneys. There was diminution in the weight from 4 to 20 pounds. Two patients increased in weight 6 and 8 pounds. Many of these symptoms lasted $2\frac{1}{2}$ months after the experiment

(1) N. Y. Med. Jour., May 8, 1909.

was discontinued. Six of the men were accustomed to alcohol. Two of these had no symptoms and 2 resisted more than the others.

Chronic Eczema of Infants is, according to J. Freer,¹ a constitutional disease which must be differentiated from dermatitis. The etiology has two factors, congenital predisposition and feeding. Two forms must be distinguished; one, weeping eczema of the head, the other, disseminated dry eczema. The first usually attacks well-nourished children with a pasty complexion. In addition to the hairy scalp, the ears, nose and cheeks may be affected by the eruption, and the hands and arms may likewise be attacked. Overfeeding and chronic constipation are the usual concomitants of this, the seborrheic form of eczema. Improvement and cure usually follow the change from pure milk diet to mixed diet at the end of the first year. The second variety of eczema occurs almost exclusively in artificially fed children. Such children are weak, pale and thin. The eruption, not as evident as in the first form, consists of scattered patches of dry, scaly, infiltrated lesions that may be found over the whole body. While local treatment must be used in every case to make the children comfortable, recovery depends upon changes in diet. Reduction of milk is the principal point. Carbohydrates must be given to make up the deficiency in the foodstuffs. After the fourth month of age the child can be fed on various cereal preparations and also given fruit juice. In later months, egg albumin must be avoided, as it is as badly borne as the milk proteids. Whey mixtures may be used in cases where the child is too young to take any other food but milk. The whey may be modified with sugar and cereal gruel, a diet with which Finkelstein had great success in the treatment of eczema in children.

Treatment of Impetigo, according to W. S. Gottheil,² should be pursued along the following lines: *Ordinary impetigo*—Remove crusts gently but repeatedly. (They contain pus cocci in abundance.) Disinfect base of pustules with tampons soaked in 1% bichlorid solution. Use a desiccating paste: sulphur 10%, zinc oxid 10%, kaolin

(1) Münchener med. Woch., Jan. 18, 1908.

(2) Med. Fortnightly, Dec. 14, 1908.

10%, in ungt. aq. rosæ, with perhaps 3 to 5% of ichthyol added. Or use white precipitate ointment, 1 to 3% for younger, and 5% for older children. *Generalized eruptions* (impetigo neonatorum and impetigo herpetiformis). Isolation; hot baths, especially with cort. quercus (500.0 to 4 liters of water) or starch baths; ointment treatment as for commoner forms; general symptomatic treatment.

Arsenic Substitutes in Dermatology. In the dermatoses¹ phosphorus and its compounds are useful as substitutes for arsenic, and in some cases are superior to this drug. In crops of boils, acne indurata or inveterata, and eczema of nervous origin, calcium phosphate or the alkaline hypophosphites are highly serviceable.

Excessive Scratching should always be discouraged,² as an indulgence in this practice leads to the formation of deep excoriations which, in turn, become themselves excellent culture media for pus-forming bacteria. In that manner it is not unusual to see subcutaneous tissues become infected and very serious conditions arise such as require very radical means to cause their recovery.

Senile Pruritus, according to M. Thibierge,³ is difficult to treat and most deceptive. Chlorinated water may be applied of the strength of 1 or 2%, spirit of menthol diluted with water, mentholated oil or Lassar's paste. An ointment useful as an application to the parts that itch painfully is:

R.	
Tumenol	3liiss
Zinc Oxid	
Starch	aa3vi
Petrolatum	3liiss
M.	

No treatment is lasting. Recourse must be had to various means, gelatin baths being recommended. Internal treatment consists essentially of restricting the patient to a milk diet. The dechloridization is useful in certain cases, but it is difficult to continue for any length of time.

(1) Amer. Jour. of Derm., March, 1909.

(2) Amer. Jour. of Derm., May, 1909.

(3) Rev. Francaise de Med. et de Chir., June 25, 1909.

Lime Salts in the Dermatoses. B. Bellmann¹ has had good results in purpura, urticaria, herpes gestationis and senile pruritis from two-tablespoonful doses after meals of a 5% pure solution of calcium lactate. The preparation was without effect in angioneurotic edema, eczema, lichen ruber, habitual herpes or pemphigus.

Eucalyptus in Leprosy. H. T. Hollmann² advises eucalyptus baths and internal treatment as follows:

For medical baths.—Formula: Take of thoroughly cut eucalyptus leaves, $\frac{1}{2}$ lb; of Ohia leaves (mountain apple—*Jambos malaccensis*), $\frac{1}{2}$ lb; ground hematoxylon bark, and ground hemlock bark, each 1 ounce. This is tied in a small muslin bag. Directions: To each bath, place bag in 5 gallons of water, boil for one hour, of this take $2\frac{1}{2}$ gallons and add to the daily bath.

For internal use.—Take eucalyptus leaves, cut up thoroughly and place in still, cover with water and place on fire. From a 5-gallon still we get 3 gallons of distilled eucalyptus. Directions for using this distillate: Take $\frac{1}{2}$ teaspoonful in a glass of sweetened water three times a day. Gradually increase the dose until the patient is taking a tablespoonful three times a day.

Results obtained after 2 years' continued use of the bath and internal administration of eucalyptus: The glands of the skin are stimulated. The skin now presents a much clearer, cleaner, brighter, healthier appearance. It softens the thickened, indurated skin and underlying integument. The skin becomes softer and more pliable. "Leonine" facies become less marked. The 2 cases, one reported by Goodhue and the other by Hollmann, as showing marked improvement are now *not* the exception, but many more lepers show this decided improvement. Marked improvement appears in leprous neuritic pains. This pain is almost intractable to remedial agents, but under baths and eucalyptus internally many are relieved to a great extent. The numbness of the hands and feet, a feeling as if the parts were asleep, becomes less marked in many cases. Eucalyptus also relieves the coldness of these parts. Itch, leprous as well as parasitic, is cured.

(1) München. med. Woch., June 22, 1909.

(2) N. Y. Med. Jour., March 27, 1909.

Formerly there was an almost constant prevalence of one or the other variety of itch. To those who use this treatment, itch has become a rare disease or symptom. Many cases of leprous excoriations, ulcerations, erosions and abrasions of the skin and mucous membranes are healed. The sores of whatever variety, except where the bone is affected, are stimulated, old scabs and crusts are thrown off and healthy granulations appear, and finally healthy rosy skin covers it over. Swollen head fever, first described by Goodhue in a previous report, has ceased to assume epidemic proportions, and has, in fact, largely disappeared. There have been *no* attacks in those using baths, etc. Leprous fever, produced by exacerbation of the disease or perhaps by fresh invasion of the germ, has shown a decided decrease in the number of patients. Many have not had an attack since starting treatment 2 years ago.

It has not permanently overcome contractured fingers. It will only relieve the stiffness in the hands and fingers of those whose hands and fingers were stiff from leprous hypertrophic changes, and this only when treatment is continued regularly. It will not cause leprous tubercles to disappear. Those patients who show the most marked improvement have followed the bath by an inunction of a salve composed of:

R.
Oil of Eucalyptus,
Oil of Chaulmoogra, equal parts.
M.

Among those who have regularly taken the baths, and internally eucalyptus and strychnin, the death rate has been less than 5%, and less than 2% due to leprosy.

Polyvalent Staphylococcic Stock Suspension in Dermatoses. According to H. R. Varney¹ polyvalent staphylococcic stock suspensions administered in appropriate doses have a decided therapeutic value in a group of localized, rebellious infections of the skin. Their administration is practically without danger, bringing about prompt cessation of the active infection and immunizing the patient against a recurrence of the infection for a more

(1) Jour. Am. Med. Assoc., Aug. 28, 1909.

or less prolonged interval. Clinical observations act as guides to the time for reinoculation and the size of dose to be administered. The appropriate standards for size and frequency of doses have been previously established from opsonic estimations on laboratory patients with similar infections, and are not necessary for each specific case. Failure to immunize the patient artificially may be due to an abnormal condition of the skin, nonspecific bacterial suspensions, or incorrect dosage. Much time is saved in the use of stock suspensions by the elimination of opsonic indices and by the assistance derived from other therapeutic measures. Less suffering, less deformity, less danger of systemic infection and less liability to recurrence are the advantages derived from the use of bacterial suspensions as a therapeutic agent.

Atoxyl Dermic Reaction. According to Moro and Stheeman,¹ after repeated injections of atoxyl the skin reaction is not only more intense, but also appears more quickly than at first, and that there exists a notable parallelism between the primary atoxyl reaction and the cutaneous reaction of von Pirquet to tuberculin. This parallelism showed itself also in the degree of reaction, i. e., weak reactions to tuberculin corresponded in general to weak reactions to atoxyl and the reverse. The most marked primary reaction to atoxyl was met with in scrofulous children.

(1) *Münchener med. Woch.*, July 15, 1909.

CHAPTER IV.

ACTINOTHERAPY AND RADIOTHERAPY.

Radium in Lupus Erythematosus is discussed by George Booth¹ who reports the case of an 11-year-old girl with a tuberculous maternal history. She was attacked by lupus on the bridge of the nose. X-rays were applied. The disease was arrested and eventually the part healed, with some loss of substance and consequent disfigurement. Whilst the nose was being treated, a second outbreak of the disease commenced a little to the inner side of the left leg, below the patella. X-ray treatment was applied unsuccessfully. As the disease was spreading, Booth decided to try the effect of radium bromid, placed on a small disc and covered with mica. The ulcerated surface was covered with thin oiled silk, and the disc was moved slowly over the surface for 20 to 30 minutes, once or twice a week, as was thought requisite. The treatment was continued for some time with excellent results.

X-Ray Treatment of Scalp Ringworm. For an extended discussion of this subject the reader is referred to the PRACTICAL MEDICAL SERIES, Vol. viii, 1909.

X-Ray in Erythema Multiforme. W. S. Lain² reports the case of a woman with extreme erythema multiforme, involving the extensor surfaces of the fingers, the hands and arms to the elbows. She had tried the usual internal eliminants and local applications without any subsidence of the symptoms. He began the x-ray Jan. 23, 1909, and continued giving treatments, each 10 minutes in length, on January 24, 25 and 28. By the last date the eruption had disappeared except for the brownish color. On February 10 there was a recurrence of all the former trouble at the same localities. He renewed the treatment

(1) British Med. Jour., April 3, 1909.

(2) Jour. Am. Med. Assoc., May 1, 1909.

on February 11, 12 and 13. All indications of the disease then ceased—and there has been no recurrence since. No other treatment was used except salines internally and plain gauze bandages moistened with calamin lotion externally, which had been used from the beginning.

Desensitizing the Skin to X-Rays. Owing to the sensitiveness of the skin to Roentgen and radium rays, and the liability to burns if they are applied for a prolonged time, the use of these therapeutic agents has been confined chiefly to treatment of superficial lesions.¹ Various devices have been tried to facilitate the use of the rays for deep-seated tumors, usually with discouraging results. Gottwald Schwarz,² working on seeds, found that their sensitiveness to the *x*-ray was in direct proportion to the metabolic activity. If he exposed dry seeds to the *x*-ray even over long periods, they were not affected by it and developed into normal plants, whereas, if sprouting seeds were so treated, even for a short time, marked changes, as dwarfism and pigmentations, appeared in the resulting plants. This difference he considered to be due to the differences in metabolic activity, and drew the conclusion that if by any method of metabolism of the skin could be reduced during exposure to the *x*-rays, the effect on the skin might be diminished. The method he used to reduce the metabolism was pressure. He placed two capsules containing radium side by side on the skin, one lying loosely, the other held firmly by means of a rubber band. The difference between the resulting dermatides was striking. Where the pressure was employed a slight blush appeared after some days, disappearing in 3 or 4 days, whereas, where there was no pressure a severe dermatitis occurred and lasted for more than a month. The same effect was produced by the *x*-ray, the rays being applied through thin blocks of wood. Where the blocks rested lightly on the skin, the effects were severe and lasting; where they were submitted to pressure, slight and transient. Schwarz concludes that the differences are due to different metabolic activities of the free skin and of that under compression. By pressure on the skin during radiation deep tissues

(1) Medical Record, July 24, 1909.

(2) Münchener med. Woch., June 15, 1909.

may be treated without danger of superficial burns. Transference of physiologic data from plants to animals is illogical. The first have no nervous system.

X-Ray and the Sweat Glands. Commenting on the procedure urged by F. J. W. Porter of treating excessive axillary sweating by operation, A. H. Pierie¹ remarks that it seems a very drastic method when a much less severe treatment with no operation, attains the same result. His attention was called 4 years ago to the fact that the effect of *x*-rays on the sweat glands was to destroy them. The first case was that of a joiner to whom he applied *x*-rays in treatment of a tuberculid over the hip. Some months after he was cured he no longer perspired on the part of his body on which the *x*-rays had fallen. Since that case Pierie has noticed the same condition in many tuberculous glands in the neck. Children lose permanently not only the downy hairs on the side of the neck by this treatment, but also the sweat glands. To destroy the sweat glands, 6 efficient *x*-ray treatments is all that is necessary—one treatment a month, giving at each sitting the maximum dose that the skin will stand. The sweat glands are the most readily affected of all the glands in the body by the *x*-rays, and the most readily destroyed. By sufficiently *x*-raying the axilla in the way described, not only are the sweat glands destroyed but also the hairs of the axilla. Sweating is usually a local expression of constitutional states. Destruction of sweat glands does not change these.

X-Ray Dermatitis. In this the following changes take place, according to S. Burt Wolbach.² There occurs obliteration of vessels by degeneration as well as proliferation of endothelium. The muscular coat of the blood-vessels also degenerates and connective tissue takes its place. It begins in the small vessels and, at length, involves the larger ones. This obliteration leads to the formation of foci of degeneration. The layer of these latter leads to ulceration. An important change is excessive proliferation of epithelium into and around the areas of degeneration.

(1) British Medical Jour., April 17, 1909.
 (2) Amer. Jour. of Derm., May, 1909.

X-Ray in Rhinoscleroma. A. R. von Ruediger-Rydiger¹ points out that subjective improvement of the symptoms appears at a very early stage of the treatment and persists for a long time, even when the healing is incomplete. It tends to incline both the patients and the physician to discontinue treatment too soon and may induce neglect when recurrence occurs.

High-Frequency Currents in Dermatology. According to W. Parker Worster² vibratory electrification by means of high-frequency currents increases internal respiration of the tissues and by dilating the arterioles hastens the flow of blood into the capillaries, thus increasing metabolism. Currents of high amperage give no unpleasant sensations in passing through the body. They deepen inspiration and increase the amount of oxygen taken into the body. They are the best treatment for neuritis and chronic rheumatism, relieving pain and restoring function rapidly, and are equally good in sciatica, lumbago and gout. In arthritis deformans pain, stiffness and soreness rapidly disappear. They are useful in removal of moles, warts and small tumors. Many skin diseases yield readily to them; among them ringworm. Old ulcers are caused to heal by the use of an effluence. Diagnosis should be made carefully, as in unsuitable cases injurious effects occur.

Spread Radium in Dermatoses is discussed by J. M. Davidsen,³ who points out that there are great advantages in this method. First, it enables all the radium radiations to come into effective action on the surface to which they are applied. All the alpha, beta and gamma rays may be used, or by the interposition of certain screens all the alpha rays may be cut off, and, if necessary, the beta rays also. A sheet of paper suffices to cut off all the alpha rays, the beta rays may be cut off by aluminium or leaden screens of varying thickness. The quantity and quality of the rays best suited to cure any particular disease can only be arrived at by trial.

In all successful cases the remarkable effect is shown that by properly timed exposures the abnormal cells in-

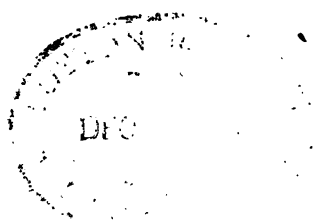
(1) *Berliner klin. Woch.*, Jan. 25, 1909.

(2) *Medical Record*, Sept. 18, 1909.

(3) *British Medical Jour.*, March 19, 1909.

vading the human body are gradually destroyed and absorbed, while none of the normal healthy cells are destroyed. Such being the fact, two questions naturally arise: (1) Which of the radiations produce the beneficial results? and (2) What are the abnormal cells which are more resistant to the radiations than the normal body cells?

Radium is not the only radioactive body giving off alpha, beta and gamma rays. There are other substances which do so, such as thorium and actinium, and doubtless others which remain to be discovered. Radium itself does not directly produce all the rays. It first produces what has been called an emanation. The disintegration of this emanation causes it to give out the three types of rays. The therapeutic action of radium depends mainly on the amount of the emanation which it contains. If this store of emanation is driven off by dissolving the radium in water, it proves to be a gas, which, when collected, gives out the same amount of alpha, beta and gamma rays that it did when unseparated from the radium. But, when the deëmanated radium goes on slowly producing and storing up more emanation until in about one month's time it has regained its maximum strength, the emanation which has been thus separated from its parent goes on decaying, losing about half its strength in about 4 days, and becoming in about 16 days almost powerless. The effect of the rays from a given quantity of separated emanation is as powerful as when it is contained in the radium, and thus, consequently, it is possible to send a tube of the emanation to be used in the treatment of a case at a considerable distance without any risk of losing radium in transport.



CHAPTER V.

GONORRHEA AND CHANCROID.

GONORRHEA.

Bacteriology of Gonorrhea. According to N. P. Rathbun and T. H. Dexter,¹ the accepted characteristics of the gonococcus are that it is a biscuit shaped diplococcus, which is Gram-negative. It never occurs in chains, which is another characteristic, but occurs in groups, especially in groups of fours. It takes basic stains, but is readily decolorized by alcohol and acids. Finger says that a Gram-negative diplococcus, which is not the gonococcus, is found in the urethra of normal individuals and in individuals infected with gonorrhea in 4.6% of cases, but that the presence of a Gram negative diplococcus in the urethra is positive proof of gonorrhea in 95.35% of cases. There is also a Gram-positive diplococcus which may be recovered from the normal or gonorrheal urethra in a fairly large percentage of cases. Finger, Neisser, Bumm and others have for several years succeeded in obtaining pure cultures from the organisms, usually from the pus of acute gonorrhea, using human placental blood serum as a medium. The growth has taken place in from 24 to 36 hours, appearing in surface growth as gray-white, slightly shining, dew drops, and after 72 hours presenting irregular margins, and these cultures have been successfully transplanted to simple nutrient agar, beef and pig serum agar, ascitic and cystic fluids and peptone agar. They will grow only between the temperatures of 25 degrees C. and 39 degrees C., with an optimum of 36 degrees C. In room temperature they will grow from 24 to 36 hours. They are very sensitive to heat and are destroyed abso-

(1) N. Y. Med. Jour., Aug. 7, 1909.

lutely by an exposure of 12 hours to a temperature of 39 degrees C., and 6 hours to a temperature of 40 degrees C. They will live and remain active in pus at the ordinary room temperature till the pus becomes thoroughly dry. They lose their virulence in water in from 4 to 6 hours.

The Gonococcus, according to T. Watabiko,¹ on carbohydrate media ferments only mannite, dextrose, dextrin and levulose.

Gonorrhea Septicemia. Gonorrhea, according to J. Dieulafoy,² is not a mere local affection but may become a septicemia rapidly fatal or may induce acute and chronic joint affections, ulcerative and proliferating endocarditis, pericarditis, bronchopneumonia, meningitis, infarcts in the lungs, peritonitis, pleurisy, phlebitis, etc. The urethral process may have been long healed or it may vanish as the other symptoms appear. Barbiani has reported a case in which gonococci were cultivated from the blood in what was apparently a case of acute articular rheumatism. Profuse sweats seem to be characteristic of gonococcus septicemia; other symptoms may suggest typhoid. Dieulafoy reports a typhoid syndrome fatal in one week, which proved to be solely a gonococcus septicemia. In two other cases patients were convalescing from gonococcus septicemia when typhoid fever developed. They had been treated with gonococcus vaccine. The results have impressed Dieulafoy with the value of opsonin vaccination.

Gonorrheal Arthritic Iritis. W. C. Posey³ reports the case of a male gonorrheic with a family history of gout, who had repeated attacks of iritis and arthritis of great virulency. Normal vision remained, although there were synechiæ. According to Posey a very much attenuated virus remains for years in some parts of the genital organs, which gives no local trouble, but from time to time sets up local irritation in the synovial and serous cavities. Gonorrheal arthritis often occurs in gouty families.

In Chordee and Erections in Gonorrhea the Practitioner⁴ advises the following:

(1) Jour. of Med. Research, April, 1909.

(2) La Presse Med., May 19, 1909.

(3) Medical Record, Aug. 29, 1909.

(4) April 1, 1909.

R.
 Camphor monobrom. 3l.
 M. et ft. pulvis No. X. Sig.: One thrice daily.
 R.
 Kali bromid. 3lll,
 Lupulin,
 Camph. aa gr. XVI.
 M. et ft. pulvis No. X. Sig.: One thrice daily.

Antigonococcic Serum according to R. Hersey¹ is without effect on acute gonorrheal infections, whether they exist in the lower urinary tract or in any other part of the body. Its value in subacute and chronic cases is also very doubtful. The value in toxemic gonorrheal joints is without question. In the past these painful joints accompanying and following gonorrhea have been most resistant to treatment, both local and general. This remedy will give rapid, permanent relief. [See also PRACTICAL MEDICINE SERIES, Vol. VIII, 1908.]

In Chordee M. Haber recommends the following prescription of R. W. Taylor:²

R.
 Ex. belladonnæ 2 gr.
 Ex. opil aq. 6 gr.
 M. et fiat suppos. No. 6.

Huber instructs his patients to insert one in the rectum about 3 or 4 hours before retiring, one just before retiring, and one if awakened by the chordee during the night. This prescription generally acts like magic. The pain either does not appear, or if it does it is much less severe. If so treated the chordee generally entirely disappears by the third night. The suppositories are only used symptomatically and not curatively, and are reduced in frequency or dispensed with entirely as the chordee gets less and disappears. The suppositories may be used with excellent results in acute prostatitis and acute cystitis with marked tenesmus and frequency of urination.

Urethritis With Stricture. Discussing gonorrhea complicated by stricture, A. G. Rytina¹ remarks: For the successful treatment of stricture, various methods have

(1) Ill. Med. Jour., June, 1909.
 (2) Medical Record, Jan. 22, 1909.
 (3) Amer. Jour. of Derm., March, 1909.

been devised, but as all of these have to be supplemented by the gradual dilatation treatment if permanency of cure is to be expected it seems only rational to try this in the beginning, and resort to one of the others only when it is contraindicated or ineffectual. The dilatation treatment is always begun with a filiform, and followers, unless the stricture is of such caliber as to admit of the easy introduction of ordinary sounds larger than 18 F. The French follower known as Guyon's with Janet's modification is preferable, because it corresponds the more nearly to the natural curve of the urethra, and because it comes in more frequent numbers and in larger size than ordinary Le Fort followers. The sounds should be passed about twice a week, although this will vary according to the individual, the character of the stricture and the reaction following.

At such treatment not more than two or three numbers' increase of the French scale will be advisable. In some cases we may have to use the same number at two or three seances before an increase is permissible. As the caliber increases and the tendency to recontraction diminishes, the interval of passing the sounds may be increased to a week, then two weeks, finally it may be necessary to pass them but once a month. The dilatation should be carried up to at least 34 or 36 F. In some cases it may be advisable to dilate up to 40 F. or even higher.

As the meatus is the narrowest part of the canal, and it is manifestly impossible to pass through it instruments of such large caliber, formerly a meatotomy had to be done. To overcome this necessity, and reach a caliber of 34, 36 or 40 F., the Kollmann dilator is an invaluable instrument. The ordinary steel sound is used up to 25 to 28 F., then the Kollmann dilator is substituted and the dilation continued up to the limit desirable. While the sound is in the urethra, the strictured area over the sound is massaged. Dilation acts mechanically by stretching the strictured area. It also produces congestion, a softening and resorption of the scar tissue.

The other methods of treating stricture are by divulsion, electrolysis, internal and external urethrotomy, and resection of the urethra,

The treatment of leucoplasia is by the deposition of $\frac{1}{2}$ % carbolic acid or $\frac{1}{2}$ to 1% salicylic acid, lanolin ointment by means of an anterior ointment applicator, high dilatations, irrigations, etc.

Chronic posterior urethritis without prostatic or vesicular involvement is treated by irrigations, high dilatations with the Kollmann dilator, and instillations by means of the Keyes-Ultzman syringe of various irritating solutions. The one usually employed is AgNO_3 in strength varying from $\frac{1}{4}$ to 5 or 10%. The idea of using these solutions is to replace an active for a chronic inflammation, and in that way hasten the absorption of the inflammatory products. When the prostate and seminal vesicles are involved they must be energetically treated. The most effective treatment of chronic prostatitis and vesiculitis is by massage per rectum. Hot and cold irrigations, electrical applications, ichthyol suppositories, etc., all play but a minor rôle in comparison with massage. The massage should not be performed blindly, but the massaging finger should begin at the periphery of the upper pole of the prostate, and gradually pass over the entire gland, paying particular attention to areas of induration, and to periprostatic and perivesicular adhesions, if present. The pressure must be vigorous and firm, and the infectious material always massaged in the direction of the urethra. If the vesicles are also involved, they should be massaged and perivesicular adhesions should receive especial attention.

The gland is massaged about 2 or 3 minutes, and the procedure must be performed about 2 or 3 times per week. After each massage give an irrigation to wash out the infectious material and prevent cystitis, urethritis, etc. If irrigation is impossible, instruct the patient to come to the office with a full bladder and the urine is voided after the massage. The patient should also be ordered to take hexamethylenetetramine and to drink plenty of water.

Many of these cases develop what is called an irritability of the prostatic urethra, characterized by pain in the prostatic urethra, frequency of urination, etc. In these cases, the deposition of 2% carbolic acid in lanolin in the prostatic urethra by means of Young's posterior ointment applicator often acts like magic.

Gonorrheal Epididymitis is, according to A. Ravogli,¹ as a complication of gonorrheal urethritis not so frequent at present as it was in the past. The modern treatment of gonorrheal urethritis has certainly diminished the period and the intensity of this disease, and of its consequences. If we examine the statistics of the hospitals, of the public clinics, and afterward those of private practice we find a great difference in the relation between urethritis and epididymitis. Zeissl referred to his hospital practice and from November, 1869, to November, 1870, in his *Abtheilung und Klinik* in K. K. allgemeinen Krankenhause, he had under treatment 114 cases of gonorrheal urethritis in males, mostly in a torpid condition, among them 76 cases of epididymitis. This large number of cases of epididymitis does not represent a creditable statistical datum for the reason that the majority of the patients came from the working people, and before repairing to the hospital had been treated by different physicians or had treated themselves, and when they could no longer keep on their feet on account of their suffering, went to the hospital.

Burnett stated also that epididymitis in his private practice was of relative infrequency, but in the out-clinic among gonorrheal patients it had reached 12.2%. In 1862 Rollet reported 678 cases of epididymitis among 2,425 cases of gonorrheal urethritis, 27.9%. Jullien in 1886, among 2,500 cases of gonorrheal urethritis, found 381 cases of epididymitis, or 15%. Tarnowski in 1872, out of 5,203 cases of gonorrheal urethritis, found 637 cases of epididymitis, or about 12%. Finger, during 5 years' service in the hospital, out of 1,844 cases of urethritis found 548 of epididymitis, or 29.9%. Jordan (1904) among 812 cases of gonorrheal urethritis between private practice and clinics found 91 of epididymitis, or 11.7%.

In these past years the number of cases of epididymitis in proportion to those of urethritis has been somewhat decreasing, so much so that we find that Finger brings the number of cases of epididymitis coming from gon-

(1) Amer. Jour. of Derm., March, 1909.

orrhea down to 12.5% ; LeClerc Daudry to 12%, Tanaka 11.1%. The proportion of epididymitis to gonorrheal urethritis diminishes, when we go to private practice. The above given data are taken from the out-clinics, where many working people go for treatment, but in private practice it is still less. Wagapow in his practice found epididymitis 8.4% and Berg 7.5%. Ravogli, in his private practice has reduced epididymitis to 6.5%, as he had 26 cases of epididymitis in 5 years among 420 cases of gonorrheal urethritis.

The principal factors in the reduction of epididymitis are the obedience of the hygienic rules by the patient, and the treatment given by the physician.

The percentage of epididymitis in Cincinnati hospital practice is very large, as shown by the following table:

	Gonorrheal Urethritis.	Epididymitis.
1904	29.....	50
1905	27.....	44
1906	37.....	26
1907	61.....	26
1908	50.....	28
<hr/>		<hr/>
Total	204.....	174

This is due to the class of patients who apply for treatment at the hospitals, and to the rules of the hospital. In Cincinnati, hospital cases of gonorrheal urethritis are not admitted for treatment unless complicated with other troubles which render the patient entirely disabled. The patients who apply to the hospital are usually of the working class and have entirely neglected the urethritis, or they have used some internal remedies, or injections with patented mixtures advised by a friendly druggist; and although they were suffering with posterior urethritis, and with some inflammation of the vas deferens, they have continued their work until they could no longer endure the sufferings and were compelled to repair to the hospital.

The *causa proxima* of the epididymitis is the gonococcus,

which after having affected the posterior urethra, affected the caput gallinaginis, and spreading in the prostate through the ejaculatory ducts and through the vas deferens reached the epididymis, causing the inflammation of this organ.

As an accessory cause great importance has been given to trauma; but it was found somewhat difficult to explain how, after an insignificant blow, an infiltration and a swelling of the epididymis could follow in so short a time, when the patient had suffered from gonorrhea for a long time. This contingency was explained by Oppenheim and Löw through some antiperistaltic motions of the vas deferens. They claimed to have artificially produced streptococcic epididymitis by depositing streptococcic culture on the colliculus seminalis, and by electric irritation of the hypogastric nerve to have caused antiperistaltic motions of the vas deferens.

Schindler, however, repeating the experiments, could not succeed in producing a streptococcic epididymitis in the rabbit, nor could he reproduce an antiperistaltic motion of the vas deferens with electricity, but he succeeded in obtaining these motions by irritating the colliculus seminalis after it had been previously injured.

An irritation applied to the testicle by a blow, or by some injury produced on the colliculus seminalis with a bougie or catheter may favor the aggregation of the gonococci and determine epididymitis.

Tanaka referred to long statistical tables of the different occupations of his patients, and he came to the conclusion that individuals who by their occupations remained sitting, as students, painters and tailors, are more rarely affected with epididymitis, than those who must remain on their feet or are exposed to trauma, such as pressers, stone-masons, manual laborers, and occupations of a similar nature.

Tanaka greatly praises the Japanese habit of wearing constantly a suspensory or bandage to hold and protect the generative organs, and we must say that the use of a suspensory or of a bandage to hold and protect the testicles is of a great advantage in preventing epididymitis,

Epididymitis usually affects one of the testicles, sometimes it is the right, at other times it is the left, but it seems that the right is more frequently affected. In fact Castelnau observed that of gonorrheal epididymitis 47.6% affected the right and 47.2% the left testicle, and in 5.2% both sides were affected. In the 76 cases of epididymitis reported by Zeissl 36 affected the right side and 33 the left. In 7 patients both sides were affected, not both at the same time, but in an alternating way. Of the 93 patients observed by Tanaka less had the left testicle affected than the right. Seven suffered on both sides, but some time apart. It seems that epididymitis of both testicles at the same time is extremely rare. In Ravogli's experience, also, among 174 cases of epididymitis, we find that the right testicle was involved in 92 cases, and the left in 82. It is difficult to explain this little difference between the two sides. Some believe it to be attributable to a certain difference in the length of the testicles, that one which hangs lower down being more exposed to injuries.

Ravogli cannot find any connection of seasons with epididymitis, although Finger believes that in very hot and dry weather epididymitis is somewhat more frequent. Tanaka's statistical tables claim that epididymitis is more frequent in March, June and November, when the temperature from cold becomes warmer, or from warm passes to the colder. Ravogli accepts the opinion of Jordan that more gonorrhea means more epididymitis, and as a consequence of more vacations and feasting, the more gonorrhea, and afterwards the more epididymitis.

The difference in the number of cases of epididymitis in private practice, public clinics and hospital practice shows that well directed treatment has greatly diminished this complication. In Ravogli's private practice he has not had more than 6.3% of epididymitis, while in the hospital epididymitis cases are frequent. Le Fort refers to 576 cases of gonorrheal epididymitis, of which 264 had never had any medical treatment for their urethritis. In 93 cases observed by Tanaka 19 had never had any treatment, 47 had received treatment by a friendly druggist,

mostly balsam without any injection; 27 had received injections but often had discontinued and used them by themselves without good medical direction. On the other hand, it cannot be denied that an attempt to force the injection into the posterior urethra by the Janet method in an anterior urethritis has been the cause of much epididymitis. In the same way, the attempt to introduce a sound or a catheter for treatment, when an acute gonorrheal posterior urethritis is going on, may have the disagreeable result of causing the process to spread from the colliculus seminalis to the vas deferens and produce epididymitis.

Epididymitis is liable to come very early, after the gonorrheal process has affected the urethra for only a few days, and also very late after the gonorrheal process has been many months in the chronic stage. In general, Ravogli agrees with Finger, R. Bergh, Jordan and others that epididymitis occurs when the process from an acute stage becomes subacute or epididymitis occurs when anterior urethritis has affected the posterior urethra. Indeed the patient after the fourth week is rejoicing that the discharge has nearly subsided, he thinks himself well; the only trouble is a frequent urination and some tenesmus in squeezing out the last drops of urine, in a word his urethritis has affected the posterior urethra. This is usually after the fourth week; the time when epididymitis occurs can be said to be at the end of the fourth and at the beginning of the sixth week.

Complications of Acquired Gonorrhea in Children.

In an article of a special pleading nature which denies that syphilographers recognize innocently acquired gonorrhea, Flora Pollack¹ states, rather in conflict with other observers, that Bartholinitis rarely occurs. Pelvic abscess is never found. Although pelvic peritonitis is rather common, it is of a low degree, and in this series of 189 cases has never reached the suppurative stage. The symptoms of peritonitis in a child who has a gonorrheal vaginitis or urethritis are fever, abdominal tenderness usually with retraction, at times distention, vomiting and constipation.

(1) Johns Hopkins Bull., July, 1909,

In 10% of this series none of the children developed abscess. Although the child looks ill it does not lie down, but throws itself over a chair, lying on its abdomen until the paroxysm is over (for the pain is paroxysmal), and then resumes its play; the child loses weight, is pale and fretful, but cannot be induced to remain quiet, proving that its condition is not as grave as in the adult.

Bartholin's abscess occurred but three times or in 1.6%. The youngest in the series also had mastitis. Buboës are rather frequent, not quite 15%, developing large, tender glands, though even here suppuration is rare, occurring but twice in the series.

Arthritis is rare, occurring but three times. Involvement of the rectum is rather more frequent and occurs as a proctitis as well as an ischio-rectal abscess, being present 7 times, about 4 per cent. The cases referred to had definite gonorrheal infection of the rectum. Urethritis is the most frequent complication, as would be expected, occurring at all ages. One child had rhinitis; one a scarlatiniform rash over the entire trunk; one a cardiac lesion and peritonitis; one chorea, and one mastitis.

The extensive and very painful excoriations due to the gonorrheal discharge must be regarded as one of the symptoms rather than a complication of the disease, as they are always present, even though proper treatment soon relieves the condition, and if continued prevents its recurrence; it is a curious fact that in exacerbations of the disease redness is apt to occur with the discharge, when this is gleety, as well as when purulent.

Gonorrheal Periurethral Folliculitis. According to N. E. Armstrong,¹ among complications of gonococcic urethritis, periurethral folliculitis with subsequent abscess formation holds a very important place. If the contents of the abscess cavity are evacuated into the urethra, healing may be delayed for an indefinite period, but the prognosis as a general rule is favorable as regards a perfect restoration of the parts to their normal. If, however, the pus makes its appearance on the surface, the abscess rupturing from without, and especially when this unfavorable com-

(1) Amer. Jour. of Derm., July, 1909.

plication ensues in the posterior perineal region, a urethral fistula is invariably established, which is very obstinate and protracted, and may resist all attempts at therapeutic interference. In such a state of affairs one must continually be on his guard against urinary infiltration and endeavor to forestall this serious sequela by timely intervention.

Gonorrheal Ulcero-Membranous Stomatitis has been so repeatedly reported in the adult¹ that the following editorial statements of the *Lancet-Clinic* are rather surprising. A German of some note, Wilhelm Karo,² calls attention to "Stomatitis Gonorrhoeica," a hitherto almost unknown form of gonorrheal infection. Syphilitic diseases of the oral cavity, as the writer says, "are generally well known, but gonorrheal stomatitis is unfamiliar even to a great many genitourinary specialists and dental surgeons."

"As a rule, it occurs a few days after birth. After this period, the mucous membrane of the mouth presents circumscribed yellowish deposits, especially in places where the mucosa overlaps the edges of the palate bone, and where the bony and cartilaginous parts show their white color through the tissues. There is no sign of a widespread involvement of the mucous membrane; the lips and cheeks are always free from any lesions. The disease always appears typically in the neighborhood of the posterior palatine process and on the back of the tongue, while the lower parts remain intact.

"Wherever these yellowish deposits appear, a layer of sticky, purulent matter can be easily scraped off, beneath which a white base will be noticed. Such parts of the mucous membrane as are unaffected are also free from swelling. When the sticky material is examined, typical gonococci can be easily found. These deposits are never in the form of membranes, such as, for instance, are found in diphtheria; the entire mass simply represents a superficial imbibition of the upper layers of epithelium. This, however, generally disappears after the third day, and in its place a deposit of thick pus will be observed,

(1) *Practical Medicine Series, X, 1904.*

(2) *Int. Jour. Surg., June, 1909.*

which is gradually dissolved by the saliva without becoming fetid.

"In contrast to syphilitic disease of the mouth, stomatitis gonorrhoeica is always confined to the upper layers of the epithelium, and even in its later stages it extends only to the papillary bodies."

The cool way in which the *Lancet-Clinic* and Karo ignore the work of French observers like Menard, and American observers like Tuttle,¹ Morrow,¹ Phillips,² Cutler³ and Larsen⁴ is rather surprising, even in these days of assimilation without credit. The condition has more serious results than those pictured by Karo.

Gonorrheal Phlebitis. The origin of gonorrheal phlebitis is discussed by D. G. Zesas.⁵ It is not certain whether the gonococcus is carried from the veins of the penis or the vagina to the hypogastric, external iliac, femoral and external saphenous veins, or whether it gains entrance into the general circulation⁶ and is arrested in the vasa vasorum at some favorable point, there to exert a pathogenic action. The phlebitis has never been observed to become suppurative, and the cases usually end in recovery, but such complications as epididymitis and still more frequently arthropathies, especially of the knee, have been observed. The phlebitis oftener arises during the acute than during the chronic stage of the urethral affection, though in the case reported by the author the gonorrhea had persisted for more than a year. The local manifestations are apt to predominate over the general symptoms, but sometimes there is an initial chill followed by a considerable elevation of temperature. The average duration of the phlebitis is from 4 to 6 weeks, but it may be more than 4 months. It is most apt to attack persons who are engaged in laborious occupations. It is not unusual for the urethral affection to subside when phlebitis appears, and not to return on the subsidence of the venous inflammation. Gonorrheal phlebitis does not call for

(1) System of Dermatology and Venereal Diseases.

(2) Amer. Jour. of Derm., 1908.

(3) N. Y. Med. Jour., April 11, 1889.

(4) St. Louis Med. and Surg. Jour., April 18, 1896.

(5) Arch. gén. de Chir., June, 1909.

(6) N. Y. Med. Jour., Aug. 28, 1908.

treatment in any wise different from that of the commoner forms of phlebitis.

Penis Teratology and Gonorrhea. E. A. Ruggles¹ points out that the penis is subject to many abnormalities. In size it varies greatly. The prepuce may be absent or enormously developed. The organ itself and the opening thereof may be contracted to the caliber of a fine needle, or it may even be imperforate. The meatus may be located at any point in the median line extending from the penoscrotal junction on the lower surface along the raphe and frenum to the apex of the glans and from this point along the dorsum to the pubis, while its size varies from a pin hole to a slit occupying the major portion of the glans. It may also be double or triple or completely absent. The urethra also manifests the most amazing complexity of form and branching in various subjects. In so-called hermaphroditism, the outline of the penis recedes, losing more and more its distinctive character, until the walls of a hypospadiac urethra come to correspond to the labia majora and the rudimentary penis to a clitoris, and an almost perfect imitation of the external female genitals is produced. The most simple and frequent abnormality is the contracted meatus. The normal meatus, in an average-sized penis, has a length of about $\frac{3}{8}$ inch and should let pass a No. 30 Fr. sound with ease. There are, however, many meatuses which are apparently contracted, i. e., their length is a third or more less than that above stated, which in reality are not functionally contracted, since they permit the passage of a large stream of urine without effort and admit a 30 Fr. sound easily.

At the other extreme is the "pin-hole" meatus, sometimes not larger than a fine needle. Such a meatus has in gonorrhea a similar effect to that of an insufficient opening of an abscess. The secretion is dammed up and while the apparent discharge may be slight, there is an unusual amount of pus within the urethra and the gonococci are very much more likely to penetrate the mucous membrane deeply, to enter the urethral follicles and to migrate to the posterior urethra and to the prostate and

(1) Medical Record, Jan. 9, 1909.

seminal vesicles. Of course such a patient may recover promptly, but this is due to the greater resistance of the tissues, which is not caused by their anatomic structure, the mucous membrane being less permeable and the mouths of the follicles and the ejaculatory and prostatic ducts smaller or at least less pervious for the germs than in the severer cases. That such idiosyncrasy exists in these cases is demonstrated by the fact that patients who suffer from severe or obstinate complications or from gonorrheal rheumatism during their first attack of gonorrhea, generally are affected by the same complications at subsequent attacks. In either acute or chronic gonorrhea, such a meatus should be enlarged at once, if the individual will consent.

In the moderately contracted meatus, if the course of the disease is favorable, especially if it remains confined to the anterior urethra, it should be let alone. In many cases of long standing, instrumentation is necessary, and a meatus which cannot be dilated above 25 Fr. will not admit an instrument large enough to be effective.

General Treatment of Gonorrhea. In this certain principles must be recognized. Among these are a fair amount of bodily rest during the acute stage, a bland condition of the urine secured by great moderation in diet and the ingestion of large quantities of water, the avoidance of sexual excitement and alcohol. Many practitioners now believe that there need be struck from the diet none of the wholesome articles ordinarily taken, such, for instance, as red meat, but that the food should be taken in very limited quantities, should be chewed thoroughly, and should be selected with due regard to the idiosyncrasy of the individual stomach. Regularity of the bowels and the avoidance of chilling are also regarded as of prime importance.

As to the use of medicaments, alkaline diuretics are almost universally accepted as serviceable, to the point of rendering the urine almost neutral. Further, it is regarded as desirable that the patient should empty his bladder as soon as he experiences the desire to do so.

The moment the question as to the choice of drugs supposed to have a specific action arises, there is a wide di-

vergency of opinion. Perhaps salol as a urine antiseptic and urotropin receive most universal acceptance. Of balsams, sandalwood oil or its derivatives is undoubtedly the most efficient, copaiba following next in order, and cubeb being not only the most expensive but the least serviceable.

French has tried in 15 years most known methods amongst 5,000 in-patients. In the initial stage there is a tendency to dispense with chemical irrigations and injections in favor of more conservative methods, with the best results. His method is as follows: For about 7 to 10 days the patients are put to bed on a milk or farinaceous diet with 5 pints of barley-water, porridge and cocoa as extras. During this period free saline purgatives are administered every morning and an alkaline mixture containing potassium nitrate 1 ounce, potassium bicarbonate 10 drachms, tincture of hyoscyamus 10 drachms, and infusion of buchu 2 pints. No injections or irrigations are given. After 10 days on an average the previously creamy, yellow, purulent discharge becomes thinner, whiter and mucopurulent. The patient is then allowed to get out of bed and is given a convalescent diet. When the two-glass test shows that the inflammation is both anterior and posterior, irrigation is usually not practiced for 4 weeks, and it is at once discontinued if the posterior symptoms become suddenly acute. Anterior irrigations commence in the average case about the sixth day, a pint at a time being applied 2 or 3 times daily. The posterior irrigations are used never more than once a day, preferably in the morning. It is usual in posterior cases to give a second anterior irrigation in the afternoon. A solution of potassium permanganate 2 grains to the ounce, and one ounce of this to every pint of lukewarm water (98° F.), is ordinarily used as an irrigation. The strength is greatly increased. The pressure is about 8 feet, and a double-channel irrigating nozzle employed. After the urethral discharge has ceased, the urine gradually becomes clear, and threads, in average cases, are no longer visible after 6 weeks. The man is then placed on beer for 3 days, when if the urine still remains clear and the gonococcus is not demonstrated with the microscope, he is dismissed from the

hospital when 10 to 14 days free from suppuration; but never under 6 or 7 weeks if admitted with acute gonorrhea.

The only treatment which curtails the gleet stage in chronic cases is to illuminate the urethra by the electric urethroscope any time after the twentieth day of disease, and use local applications of silver nitrate to the granular patch, which is present at some time in some degree in every case of freshly contracted gonorrhea. It is usually exquisitely tender, is readily seen, and is mostly situated within 4 inches of the meatus urinarius on the floor of the urethra. When the gleet is due to chronic inflammation, examination should be made for stricture and for enlarged prostate. If the latter condition exists massage of the prostate has been suggested and iodid of potassium is sometimes of benefit.

Even though there be no obvious discharge, if the meatus be red and glazed, discharge is present. A large number of gonorrhea cases get well after 5 to 7 weeks without local treatment. French was astonished at several hundreds in India, where no injection or irrigation whatsoever was used. The ordinary duration of the urethral discharge was about 6 weeks.

According to Finger 6 weeks is the average period of gonorrheal discharge. Injections do not curtail this period.

In so far as relapses are concerned French proves the necessity of prolonged observation and the continued treatment of patients apparently cured. Of 195 cases admitted to the hospital in 1907 there were but two relapses, although most of the troops were mounted.

Vaccines in Gonorrhea. Gonococcus vaccine, according to J. H. W. Eyre and B. H. Stewart,¹ in acute gonorrhea is markedly toxic and exerts a profound influence over the disease. For routine work (hospital, out patients, etc.) vaccine treatment is not devoid of danger and requires the exercise of conservative caution. A stock vaccine comprising a dozen different strains gives results only slightly inferior to those observed when using a vaccine prepared from the patient's own organism. This is not the rule

(1) Lancet, July 10, 1909.

in most other diseases. Small doses, repeated at short intervals, are more effective than large doses at lengthened intervals. Small doses of vaccine (from 1,000,000 to 10,000,000) are safer and more satisfactory than the large doses (from 50,000,000 to 100,000,000) which are often prescribed. After an injection of from 500,000 to 2,000,000 the negative phase is either absent or extremely transient. An inoculation of from 5,000,000 to 10,000,000 causes a negative phase of usually not longer than 48 hours' duration, followed by a positive phase of from 3 to 5 days. Vaccines in small doses serve the double purpose of raising and steadying the opsonic index. A steady index just above normal is found to be the most favorable condition for rapid recovery. Simple chronic gonorrheal cases, where the gonococcus has ceased to be the infecting organism, are on a par with other chronic inflammatory states, but are frequently more difficult to cure owing to environment and local conditions. Chronic cases where the gonococcus is the sole infecting organism have a better prognosis from the point of view of treatment by vaccine than a mixed infection or one of staphylococcus only. In chronic gonorrhea with complications the estimation of the opsonic index is helpful to diagnosis and is a useful means of determining approximately the opsonic state of the blood. Chronic gonococcus infections, however, present clinical features which themselves afford valuable indications during the course of vaccine treatment. Where the gonococcus alone is the infecting organism, if the opsonic index cannot be obtained as frequently as is desirable, routine injections of from 1,000,000 to 2,000,000 doses every 3 to 5 days are safe and satisfactory; a lapse of 5 to 7 days after doses of 5,000,000; an interval of 8 to 10 days after inoculation of 10,000,000. Larger doses than these are seldom desirable. Treatment by small and gradually increasing doses at frequent intervals should at all times be observed; the use of large doses is even more dangerous than in acute cases, and may be followed by disastrous consequences. In orchitis small doses of vaccine quickly relieve pain and cause a more rapid abatement of symptoms than are obtained by the usual routine treatment alone. In iritis the severe pain, which is a

marked and obstinate feature, is relieved in 48 hours after an injection, and disappears in from 3 to 4 days; cure is much hastened. In arthritis the treatment is of considerable value.

Antigonococcic Serum, according to B. N. Dunbrant,¹ is of distinct value in infection of the prostate and epididymis and in acute gonorrheal arthritis.

Suppurating Bubo. J. A. Murtagh² says that the points upon which success in suppurating bubo depend are: Thorough application of the actual cautery to the infected ulcer. Incision into healthy skin usually in an area one to one and one-half inches covering the bubo. Thorough removal of the diseased glandular tissue and complete irrigation of the cavity by the method as described. Thorough drying of the cavity as nearly as possible by pressure, before introducing the emulsion, and rest in bed for a few days after the operation. The advantages of this method of treatment may be summed up as follows: Immediate relief from pain and discomfort. Rapid healing of the skin incision and of the diseased glandular cavity. Absence of a painful and disfiguring scar. Avoidance of the long tedious period of recovery usually experienced by other methods.

Gonorrhea and Genital Maldevelopment. A. J. Love³ claims that the gonococcus arrests the uterus at the infantile period, produces long, thin, imperforate tubes and ovaries that do not mature an ovum. The fact that all things considered, defectives are most likely to have both gonorrhea and the conditions described is not taken into account by Love.

CHANCROID.

Chancroid Ulceration G. K. Swinburne⁴ reports the case of a 26-year-old man who consulted him November 16, 1908, for a chancroid of the glans 11 months old, during which he had been under constant treatment. All ordinary means had been used. One physician had employed daily

(1) Memphis Med. Monthly, September, 1909.

(2) N. Y. Med. Jour., Sept. 4, 1909.

(3) Medical Record, April 17, 1909.

(4) Med. Record, Feb. 27, 1909.

injections in the buttock of a 2% solution of bichlorid of mercury for 30 days for an underlying lues. During that time there had been a steady extension of the disease, comprising an extensive ulceration on the under surface and side of penis and glans; the urethra had been perforated and the patient passed all of the urine through the wound. The pain was worse on urination, so that he passed urine only twice in 24 hours. After a week of ineffectual treatment, Swinburne painted the surface with equal parts of ichthyol and an organic silver salt, first applying a cocain solution. The application was made after urination, so that he could go as long as possible without removing the dressing. From that time pain diminished and the ulcer began to heal, at first rapidly, then more slowly. The applications were frequently repeated. The ulcer showed a tendency to break down at the angles when the applications were stopped or when any other preparation was substituted. The ulceration finally healed entirely but the urine still passed through the gap. The patient was now anxious to have something done to repair the condition. Behind the false opening, in the spongy body and the corpora cavernosa, was a thick indurated mass which interfered with erection, the glans penis remaining soft. The patient had a chronic urethral discharge without gonococci. Swinburne's advice was to let the condition alone or else amputate the penis behind the indurated mass.

V. C. Pedersen¹ reports the case of a 30-year-old man in whom 2 weeks after coitus a painful sore appeared on the glans. A physician applied a wet bichlorid dressing. In spite of this rapid extension followed, and when Pedersen saw him the ulcer involved the foreskin of the meatus. Numerous pockets exuded pus. The depths and angles of the pockets were filled with a necrotic tissue of jelly-like consistence, closely resembling soft boiled cartilage. No definite organisms were in the pus. Part of the slough suggested syphilis, part tuberculosis. September 12, 1907, under ether, the foreskin was divided, the sinuses and pockets exposed and the entire area cauterized with a weak solution of bromin water. All sloughing and edematous tissue was cut away as far as possible and a wet dressing

(1) Therap. Gazette, February, 1909.

of black wash applied. At the end of 6 days no great improvement had taken place, and it was then decided to cauterize the sloughs lightly with nitric acid and open the sinus passing around the urethra by a transverse incision at its base. This was done, and iodoform powder was then liberally applied. Five days after the cauterization a slough was cast, opening into the urethra. With the exception of this the patient made an uneventful recovery. Except for the loss of the skin sheath of the penis, the only deformity of the organ occurred at the terminal part of the urethra, where the glans had been largely eaten away, causing a peculiar doubling of the canal upon itself toward the left. This defect in the urethra persisted. To repair this a plastic operation was necessary.

CHAPTER VI.

SYPHILIS AND ALLIED DISEASES.

Syphilis in Physicians. C. Waelsch¹ claims, can be obviated by reasonable care. He ignores, however, obstetric syphilis and the syphilis from prostatectomy, where dangers cannot always be obviated by prophylactic antiseptics.

Syphilis and Dementia Precox. J. Roubinovitch and F. Levaduti² have tested the existence of syphilis in dementia precox by the Wassermann reaction and claim that the failure of cephalorachidian fluid reaction demonstrates that the cerebral changes which characterize dementia precox cannot be attributed to treponemic infection. This conclusion, if tested by similar failures in the tertiary stage of indubitable lues, is too strongly put. The type of the psychosis here comprehended under that *omnium gath-erum*, dementia precox, is not given. It is not stated whether the cases tested are paranoid dementia, katatonia or hebephrenia, although the last seems most probable. Paranoia and hebephrenia are indubitably arrests of development and even in cases with luetic ancestry might not show any reaction. The congenital and acquired types of non-specific lues are ignored. Three cases gave the reaction but other luetic antecedents were lacking.

Syphilis in Locomotor Ataxia. W. A. Pusey³ reports a case of locomotor ataxia with later syphilides. The patient, a 43-year-old cabinet maker, denied any infection. In 1894 he complained of "rheumatism" pains. In 1904 he began to have lancinating pains and soon after a girdle sensation; difficulty in walking in the dark and in telling the position of the limbs appeared. In 1908 slow urination

(1) München. med. Woch., April 13, 1909.

(2) Gaz. des Hôp., June 3, 1909.

(3) Jour. of Nerv. and Ment. Dis., July, 1909.

followed by incontinence occurred. Sexual desire disappeared in 1905. The first syphilide, an ulcer, appeared on the neck in 1906. When examined by Pusey, there were Argyll Robertson pupils, absence of deep reflexes in the legs, extensive analgesia and marked ataxia of the legs with loss of sense of position. When the patient first consulted Pusey there was over the front and inner side of the right ankle an egg-sized tumor with an oval punched-out ulcer at its center. There was no bone involvement. The tumor was a gumma with a broken down center. On the right shoulder was a lesion with a polycyclic convex ulcerating border, behind which was a palm-sized area of thin scarring. On the left wrist, right side of the chest and at several other points were serpiginous ulcerating syphilides. All healed under mercurials in 6 weeks. Various parts of the body showed similar serpiginous ulcers. The case raises the question of luetic reinfection in tabes. Sexual desire disappearance is often preceded in tabes by satyriasis and accompanied with perversions. The possibility of non-luetic tabes like non-luetic parietic dementia must also be taken into consideration.

Serology of Syphilis. R. C. Watson¹ asserts in defiance of both pathophysiology and of reported cases that Wassermann serum negative reaction means that there is no syphilis or that it is latent. In an early case a negative reaction makes the chances from 95% to 100% against syphilis; in a suspected secondary case from 90% to 100%; in a suspected tertiary case from 75% to 95%; in a suspected latent case from 50% to 75%; and in a suspected parasyphilitic case from 70% to 80% against syphilis.

Wassermann's Reaction in Scarlatina is reported by H. Holzmann² in a 16-year-old girl. The reaction ceased 4 weeks after the onset.

Syphilis Without Demonstrable Primary Lesion is discussed by H. Waelsch,³ who analyzes 4 cases of it in physicians. In all of them secondary luetic phenomena, including fever, sore throat, eruption, etc., were noticed, although

(1) Medical Record, Aug. 29, 1909.

(2) Münchener med. Woch., April 6, 1909.

(3) Münchener med. Woch., April 20, 1909.

a chancre had never been observed. The circumstances were such that failure to observe the primary syphilitic effect could not be considered. These cases lead Waelsch to accept the French *syphilis d'emblée*. He then discusses luetic infection among physicians acquired in professional duties, and cites 6 such cases which formed 50% of extragenitally acquired syphilis observed by him in 10 years. The seat of the primary lesion was the fingers, the disease usually beginning as paronychia, which proved quite obstinate when treated by the usual measures. This course of the lesion and the development of lymphadenitis usually led to a suspicion of the true nature of the case. The course of the disease was in all instances a benign one. Waelsch is, indeed, inclined to doubt the assertion that syphilis acquired extragenitally is very malignant. As prophylaxis against such syphilitic infections he warns against too much manicuring, which often leaves small wounds that serve as points of entry for the infection. In the presence of any larger cuts and abrasions of the skin the use of gloves is imperative in all surgical and obstetrical procedures. Treatment of any wound acquired in operating upon a suspected syphilitic should be thorough cauterization with the actual cautery; if a needle has entered the flesh it may be connected with an electric battery and the tissues about it destroyed by the current.

Treponema (Spirocheta?) Pallidum. According to B. White and O. T. Avery¹ the staining of Shereschewsky is best suited and most satisfactory for general use. *Treponema pallida* presence in a given lesion establishes its luetic character. Its absence does not exclude lues. [These last claims are the usual unscientific pedagogic dicta characteristic of certain bacteriophilic minds. The presence of tubercle bacilli in a healthy person's throat does not demonstrate tuberculosis. Their absence decidedly creates doubt of tuberculosis. The crucial test of Koch's law has not yet been fulfilled by the treponema. Until it is, special pleading like that cited is waste of time. The probabilities are in favor of the treponema as the germ of syphilis, but this has not yet been demonstrated beyond doubt.]

(1) Arch. of Int. Med., III, 5.

Treponema Pallidum in Urine of Secondary Syphilis. Barch and Michaum¹ have found the urine of acute nephritis during secondary syphilis containing the treponema pallidum. The patient had also vaginal mucous patches. The treponema, as M. Queyrat pointed out, might have come from the vagina. The treponema pallidum, moreover, was not definitely differentiated from the treponema refringens frequently found in the mouth and genitals.

Chemical Prevention of Syphilis in the Rhesus Monkey. According to S. Flexner and B. T. Terry,² it is easy to produce the primary lesion in monkeys. This can be prevented by local measures, such as 2 or 3 grains of atoxyl. After the visible syphilide has appeared this measure is also effective. These animals are not protected against subsequent inoculations, those in which the disease is arrested as late as 15 days after the primary lesion is started being subject to further inoculation just as are normal animals. In other experiments, inoculated animals were subjected to treatment 6 months after the production of a lesion. Two drugs may be used, acetoatoxyl and mercuric salt of atoxyl. The lesion in an animal yielded, partially at least, very quickly to acetoatoxyl. The effect was controlled by the serum test, the reaction being very slight after the first dose had been given. Recently the test has become positive, hence the animal is not yet fully cured. In an animal which survived 2 weeks after treatment by the mercuric salt of atoxyl the lesions reduced somewhat. This salt is extremely disagreeable to use because of the terrific reaction in the tissues induced by it. In addition to the local reaction there was also stomatitis and abscess of the parotid. This would make its use in man objectionable.

Syphilis From Industrial Implements. S. Snell³ reports the case of a man who consulted him for cycloplegia. Seven years before consulting him he had worked as a glass-blower and had to use the same tube as two other men. He developed what appears to have been a chancre at the back of the throat (tonsil). This was followed by

(1) Gaz. des Hôp., July 22, 1909.

(2) Medical Record, May 1, 1909.

(3) British Medical Jour., Dec. 5, 1908.

a rash on the chest, and his hair fell out. At this time working with the patient was a man suspected by his mates of having syphilis. The man in question denied that it was syphilis, asserting that it was *only* the "clap." The manager told the patient that he would not be harmed, but he said, as a preventive he washed out his mouth with water. In addition to this patient, two men working at the same place were infected, both having the chancre in the throat. The infector then left these works, and entered those in a neighboring town. It was stated to Snell that he had infected other men there also. In consequence of these infections the trade was notified by circular, and the man was prevented from working. Snell's patient infected his wife, and thus more than 4 innocent persons were infected by one case originally venereal.

Neisser claims that the danger of inoculation by infected instruments must be small because the virus dies very soon after removal from the body. This applies to most of the supposed dangerous sources of non-venereal syphilis, but the case of a glass-blower's instrument is a particularly dangerous one in this respect. The blow-pipe is passed from mouth to mouth without any precautions whatever. In one case cited the blow-pipe is used at the present time by three men on the day shift and three on the night, namely, the gatherer, the glass-blower and the wetter-off.

The liability of syphilitic infection from the passage of the blow-pipe from mouth to mouth has not escaped Schmidt, who quotes Eysell as having described 12 infections from 1 case, and in 6 of these the chancre was inside the mouth and in 6 only on the lips. Schmidt remarks that syphilis contracted in this way must be looked upon as an industrial accident, and would therefore be liable to compensation. Glass-blowers' syphilis has long been recognized in the United States. Cases occur frequently. Bulkley, in his "Syphilis Insontium," cites quite a number.

Mercurial Reaction in Syphilis Diagnosis. F. Curioni¹ submitted 20 non-luetics and 30 luetics to mercurial treatment, ascertaining first that the kidneys were normal in all. At 11 a. m. he injected into each 0.01 mercury bichlorid

(1) Lancet, Dec. 15, 1908.

in 1 c. c. of distilled water. The urine was first collected at 7 p. m., then at 12 p. m., then at 9 a. m. The specific reaction in the three equal samples was then tested by the following procedure: Place in 200 c. c. of urine previously acidified with a few drops of hydrochloric acid 8 gm. of copper wire, well cleaned and cut in small pieces, allowing this to remain for 3 hours, taking care to agitate the liquid occasionally, then decant the urine and wash the copper wire well first with distilled water, then with alcohol, and finally with ether. (In doing so it is necessary not to shake the copper too much.) Next place the washed copper on blotting paper to dry easily; afterward place in a test-tube quite clean and dry and close this with a plug of cotton; now heat gently the bottom of the tube until the wire becomes slightly brownish, then allow to cool; when quite cold reject the copper and drop in a tiny piece of iodine, heat again gently the bottom of the tube in such a manner as not to develop the iodine vapor too strongly. In the presence of a mercurial salt there will be formed on the cool part of the tube small crystals of yellow iodide of mercury and also red bi-iodide. The chemical reaction is easily understood. It is necessary to follow exactly the directions and to place the tube at the moment of the reaction over something white in order to make the slightest trace of color visible; to an unaccustomed eye it may be difficult to distinguish between the violet-red vapor of the iodine on the one hand and the straw-yellow of the iodide or the bright red of the bi-iodide on the other, especially as the quantity is so infinitesimal. It is well to practice beforehand with a weak solution of mercurial salt until one is accustomed to distinguish between the colors. It is most necessary that the tube should be quite dry, because otherwise the iodine vapor dissolving in the small particles of water adhering to the tube will color them and will in this way interfere with the exact appearance of the reaction. The quantity of iodine should be very small, just visible to the eye; otherwise the too abundant vapor will alter the reaction completely. Take care not to heat the top of the tube, or the vapor, not being able to sublime, will escape into the cotton-wool plug. To obtain a delicate reaction, gold in grains should be substituted

for copper, proceeding in identically the same way. Reaction in the urine of the healthy is much more than in the syphilitic, in which sometimes there is none; which means that the elimination of mercury in the urine of the syphilitic is always much slower than in health. The mercurial reaction is *nil*, or nearly so, in cases of syphilis recently contracted, especially when symptoms are apparent; and the reaction is only slightly evident, and never so well as in normal cases, in the syphilitics in whom 2 or 3 years have elapsed since the appearance of the ulcer. Finally in cases of long standing, of 10 or 12 years, the mercurial reaction is as evident as in normal cases.

In the subject of syphilis, the mercury introduced unites itself in a special organic combination with the virus, for which, being a specific remedy, it must have a special affinity, and in this condition it does not pass, or passes only with difficulty, the renal filter, and at the same time does not have any offensive action on the organism. Thus in this fashion it would be easy to understand the old empiric advice to wait before commencing the general cure until the secondary symptoms have appeared and remain in view for some time. Lesser, who had occasion to analyze the phenomena from this point of view, had the conviction that the morbid evolution is milder and more regular if the general treatment is commenced rather later and not before the secondary symptoms.

Curioni accepts this view of Lesser and believes that a too early treatment is inadvisable, because the action of the antigen being paralyzed by the mercury, the production is stopped of the special antibodies which would be the natural defense of the organism provided for the true destruction of the virus. When the virus is already in subjection to the specific antibodies (in old syphilis), or is absent, or the mercury has been given in excess, the mercury passes freely through in the urine.

On the other hand, the rapid elimination in the pseudo-syphilitic is probably due to a vital tendency of the organism to expel whatever is noxious to it. For whatever concerns the tolerance to mercury observed in the pseudo-syphilitic is at least in the beginning of the treatment. Therefore it lasts only until the special antibodies of the

mercurial antigen have not come to paralyze its poisonous action. Boeri has experimentally demonstrated this new form of immunity acquired by the organism. Salmon said about the therapy: "Sometimes in the course of the therapy of syphilis first treatment is followed by a rapid improvement, and a second, third and fourth series becomes less and less beneficial. It is convenient to alternate mercury with atoxyl and *vice versa*." It is more probable that the antitoxic reaction which proceeds in the organism against these special poisons neutralizes their therapeutic action.

Bites of Syphilitics. The bites of syphilitics¹ constitute a variety of extragenital infection, examples of which are occasionally observed by the physician. An example of this sort is given in a medical journal in which it is stated that a young man called at the office of a physician, was angry and asked the physician the reason that had led him to make certain remarks concerning himself. Some words were exchanged on the matter and finally the physician proceeded to throw out the offended individual. The latter at once gave the physician a slap and bit his thumb, inflicting a wound which of itself could not have had any serious results. But the physician knowing that his aggressor had syphilis in the contagious stage, feared contamination, as a result of the bite. In a medical sense, the matter was easily possible, and, for this bite, he asked for heavy damages. The judges gave a very light fine to indemnify the wounded physician. This is a matter of record now and it becomes a very bad as well as a serious precedent in similar cases. Naturally, the fault lies with self-constituted experts instead of those who should be known for their attainments as well as knowledge of the subjects upon which they are asked to testify.

Acute Syphilitic Meningitis. The predilection of syphilis for the central nervous system is well known, but usually the lesions have a chronic evolution, such as those found in general paralysis, locomotor ataxia and chronic meningitis. It is an error to believe that the influence of syphilis is limited to these effects, because it may give rise to

(1) Amer. Jour. of Derm., June, 1909.

acute processes; and acute meningitis, which of recent years has been carefully investigated in France, is one of its most important acute manifestations. Raoul de Coux¹ describes two types of acute syphilitic meningitis, namely, the acute secondary and the acute tertiary meningitis. The first mentioned type is characterized by its early appearance and its usual coexistence with cutaneous eruptions of a distinctly secondary nature. It is the clinical manifestation of meningeal reaction, which is only made evident at this period by a lymphocytosis of the cerebrospinal fluid.

The coexistence of the clinical and histologic meningeal reaction with cutaneous eruptions might lead one to suppose that they correspond to a true meningeal enanthema. Clinically one is dealing with a diffuse meningitis without any phenomena of localization and quite similar to the ordinary form of tuberculous meningitis, and it is from the latter affection that the diagnosis must be made. A cure can usually be wrought with mercurial treatment, and no pathologic sequel occurs. Lymphocytosis of the cerebrospinal fluid is always present and is usually very marked. A recent autopsy by Sézary showed that the lesions were disseminated and consisted in an infiltration of lymphocytes with circumvascular congestion.

Acute tertiary meningitis is quite different and undergoes its evolution in a rather latent way. It is characterized by very marked symptoms, such as acute delirium and convulsions, and by symptoms of a diffuse meningeal reaction and signs of localization, such as partial epileptoid attacks and paralysis of the limbs, face or eyes. These phenomena may result in death, but they usually undergo regression, leaving behind various sequelæ and symptoms of chronic meningitis. The diagnosis between tertiary syphilitic meningitis and an attack of meningitis during general paralysis is often very difficult, and so is that of tuberculous meningitis. A conclusion, however, may be reached if the patient's history is carefully gone into. The acute accidents during syphilitic meningitis are due to congestive outbreaks arising around the sclerogummatous lesions. Both these types of acute syphilitic

(1) N. Y. Med. Jour., Aug. 21, 1900.

meningitis have, consequently, quite a different prognosis. The secondary form can almost always be cured without leaving sequelæ, while the prognosis of acute tertiary meningitis must be more reserved, because it often leaves behind permanent lesions of the nervous system. In both, an intense mercurial treatment should be carried out.

Complement Fixation Test in Lues. According to A. Fleming,¹ this test requires only a very small amount of the patient's blood, such as may be drawn into an ordinary blood capsule as for an opsonic index or a Widal's test, and thus obviates the necessity of drawing off blood from a vein with a syringe, while at the same time making it easy for a blood sample to be sent to a laboratory for the test to be done. It does away with the use of an animal immunized to sheep's corpuscles as in Wassermann's test, or to human corpuscles as in Noguchi's modification. This process of immunizing an animal is a tedious one. Thus the only thing one requires to get frequently is the sheep's blood, which can readily be obtained anywhere twice a week or oftener from a butcher. Except syphilis, the only disease in which a positive result is at all constant is leprosy. M'Intosh reports 145 observations and concludes that Wassermann's reaction possesses a sufficient degree of specificity to make it of considerable value from a diagnostic and therapeutic point of view. Apparently certain extracts of congenital syphilitic livers give the most consistent results. While the antigen cannot be kept for any considerable period without losing to a large degree its specific qualities, the serum may be kept some weeks without losing any of its properties if it be kept sterile. A marked positive result is a certain sign of a syphilitic infection, but a negative result does not always mean that no infection exists or has existed. At present it is not possible to give a definite opinion as to the influence of the treatment on the reaction, or as to what extent the reaction can be used to indicate whether sufficient treatment has been given or not, as the results obtained seem to differ in almost every case. But one can say, as a rule, that the more complete the treatment has been, the less

(1) *Lancet*, May 29, 1909.

likely is one to find the reaction present some 2 years after the infection. Energetic treatment should be commenced at once after a positive reaction has been obtained in every case, without waiting for the development of further symptoms. Bayly describes his technic, which is a modification of Neisser's technic, as follows: A rabbit's heart is stripped of pericardium and washed free from blood with normal salt solution. Two grams of heart tissue are minced and pounded and ground into a cream and made up to 20 c. c. with absolute alcohol and well shaken. After 24 hours this may be centrifuged and the clear alcoholic extract removed. Considerable time is saved and perhaps greater accuracy obtained if complement, heart extract, and normal saline are mixed in bulk (instead of separately in each test tube) and then measured into the test tube and the serum added. By this method there are only 2 pipette measurements instead of 4. He has used 3 controls, 1 normal serum, 1 certainly syphilitic serum and 1 without any serum. He has used 2.5 c. c. normal saline, 0.2 c. c. heart extract and 0.1 c. c. fresh guinea-pig serum (complement), and mixed these in bulk in a sterile flask. After shaking well, he places 2.5 c. c. of this mixture in each of 20 small test tubes and adds 0.3 c. c. of either deplementized serum to be tested, or control serum, or control saline without serum, respectively. The tubes are then placed in an incubator at 37 degrees C. for a half hour. A dilution in normal saline of rabbit's serum that has been rendered hemolytic to sheep's corpuscles is then prepared of such a strength that 1 c. c. of this dilution when added to 1 c. c. of a 7.5% suspension of sheep's corpuscles will just produce complete hemolysis when incubated for 5 minutes at 37 degrees C., thus using velocity of reaction rather than the end point as his guide. For each serum to be tested and for the three controls 1 c. c. of a 7.5% suspension of sheep's corpuscles and 1 c. c. of the diluted deplementized hemolytic serum are taken and mixed together in bulk (= hemolytic system). There is plenty of time to estimate the hemolytic power of the serum and to prepare the correct dilution and mix the dilution of serum and the suspension of corpuscles while the tubes of heart extract, serum and complement are

undergoing their one and a half hour's incubation. After this complement fixation period in the incubator the tubes are removed and 2 c. c. of the hemolytic system are added to the contents of each tube, and the tubes are well shaken and replaced in the incubator for 2 hours, when they are removed and placed in an ice chest for 12 hours, after which they are examined for the reaction. The amount of inhibition of hemolysis will be found to vary and any definite inhibition of hemolysis he has taken as a positive reaction, while only those tubes that macroscopically show complete hemolysis have been considered to give the negative reaction.¹

Precocious Gummata. It is, remarks the *American Journal of Dermatology*, classic to look upon syphilitic gummata as a late manifestation of syphilis. It is usually about 3 or 4 years after the chancre is seen that they appear. But this is not always the case. Gummata may appear during the first or the second year of syphilitic infection. Logeay points out that these are precocious syphilitic gummata.

Syphilitic Reinfection. According to D. Bourysdorff, a 24-year-old student contracted a glans chancre, indurated and accompanied by painless adenitis. A roseola and cephalalgia coexisted with the primary lesion. So far as treatment was concerned he received three series of subcutaneous mercurial injections. Each series consisted of 40 injections. Besides these, he ingested about 70 grams of potassium iodid. Two years after this first chancre, and but 2 months after the end of the third series of mercurial injections, he had a new infection and on January 15, 1908, a new indurated chancre of the glans with inguinal adenitis. On January 25 the serum of the chancre was taken up by means of Bier's apparatus. Smears made of the serum and stained with Giemsa blue permitted the recognition of 10 to 20 treponemas in each mount. On January 30, roseola made its appearance. On February 16, complete cicatrization of the chancre had taken place.

Reinfection, according to J. Hutchinson,² may occur in 18 months. Its length is inversely proportional to the

(1) Jour. de Med. et de Chir., May, 1909.

(2) Lancet, May 29, 1909.

success of the treatment of the first infection. It may be more severe or lighter than this.

Extragenital Syphilis in Children. C. Leiner¹ reports 6 cases of extragenital syphilis in children. In the first a 5-months-old child had been infected by his dry nurse. The mother had been suffering from psoriasis for years. As the child showed the first symptoms at the age of 4 months, the mother and attending physician thought the eruption psoriasis. The treatment of daily baths and rubbing in sulphur ointment had been of no benefit. The child, in spite of good nourishment, became anemic, was restless, cried much, both day and night, and showed no increase in weight. When the child came under Leiner's care, he found its body covered with an exanthem consisting of round, slightly elevated spots of a red-brown color. He had no hesitation in declaring that the child was suffering from syphilis and not, as supposed, from psoriasis. Some of the spots on the face showed slight desquamation but never in the same manner as is seen in psoriasis. The glands in the neck were easily felt; the cubital glands were enlarged. On the left side of the upper lip was a brown, round, elevated, slightly indurated spot, suggesting the primary infection. The examination of the mother revealed non-specific psoriasis. The father and the three children showed no symptoms of a specific infection. The nurse had on both tonsils and on the mucosa of the mouth gray patches surrounded by a red area and on the body a dispersed macular exanthem. The child was given calomel daily for a month or longer. Under this treatment the child was cured. The nurse was sent to a hospital for specific treatment.

In the following case Leiner could not trace the origin of the infection: An 8-months-old child was brought to the Caroliner children's hospital with an exanthem covering the whole body, either of a peculiar character or in the form of roseola. The glands in the neck and over the ulnas were swollen. On the upper lip was a highly infiltrated patch of the size of a dime, covered on the surface with thin, brown-red, moist crusts. After removing the crusts

(1) *Amer. Jour. of Derm.*, May, 1909.

the infiltration showed an ulcer of a grayish white color with some little secretion. The part closely surrounding the ulcer was swollen and infiltrated. The submaxillary glands on the right side were enlarged and easily felt. The mucosa of the mouth and of the pharynx showed no abnormality. No severe constitutional symptoms, besides a slight anemia, could be noticed. The child was the first and only one; there had been no previous miscarriage. Neither father nor mother showed suspicious symptoms. The treatment consisted of an inunction of unguentum hydrargyri. The exanthem began to disappear at the end of the first week.

The third case was that of a 10-year-old girl who had long been known in the hospital as a Mongolian idiot and who had been many times examined previously and never showed any symptoms of syphilis. The patient was brought by her mother on account of a typical syphilitic macular-papular exanthem, acquired through an infection a few weeks earlier. The mucous membrane of the mouth was attacked by the eruption and was covered with white-gray annular or semiannular patches. A probably primary sore was found on the left side of the nose, an ulcerated infiltrated lesion surrounded by an inflammatory areola. The mother showed a typical syphilitic exanthem on the body and eruption in the mouth.

The family lived in the poorest conditions; the lodgings consisted of one small room and a kitchen. In the room the parents and the child lived and the kitchen was let to a man who was suffering from syphilis. Through him the mother had been infected and she in turn had infected her husband. The child had been probably infected either through direct contact with the parents through sleeping in the same bed with them or from the utensils used and infected by them. The child was treated in the Caroliner hospital for children by inunction with unguentum hydrargyri.

The next case, in a child of three years, had previously been diagnosed as measles. The exanthem was dispersed over the whole body and consisted of a papular eruption of a brownish red color, some single spots showing a light desquamation. Although the single patches, on super-

ficial inspection, showed a distinct resemblance to the efflorescence of measles, the whole appearance of the eruption differed widely from that disease.

The absence of catarrhal infection of the mucosa, the good general condition of the child, the normal temperature, the distinct brown efflorescence of a marked infiltration and, last but not least, the long persistence of the eruption, refuted measles. On the left cheek the child had a small tumor similar to a scrofuloderma, but more infiltrated and surrounded by an infiltrated zone. The center of this swelling was slightly ulcerated and covered with a crust. There was undoubtedly the point at which the syphilis had entered primarily. The mother had been infected with syphilis some months before and treated in a hospital by inunction with mercury. The mother showed a typical leucoderma on the neck, multiple swellings of the glands and mucous patches in the mouth.

The last two cases were boys of 12 and 7, with the primary affection of the left tonsil. On inspection of the mouth an intense swelling of the tonsil, edematous with infiltration of the left palate, attracted attention. On the tonsil was to be seen a deep ulcer covered with dirty gray membranes. The submaxillary glands of the left side were extremely swollen and infiltrated. These appearances alone cannot always be charged to syphilis at first glance, as another similar affection is rather frequent in children, *ulceromembranous tonsillitis*, a quite harmless non-specific disease.

Previous to Schaudinn's investigations, it was sometimes difficult to differentiate between these forms of tonsillitis, and only through a further observation showing the eruption of an exanthem could the diagnosis be made. Bacteriological examination cannot be taken as a reliable differential diagnostic method, because in both forms are to be found the same microorganism, the bacillus fusiformis—Vincent—with the treponema refrigens, both being almost always present in necrotic membranes of the mouth. Besides the non-specific treponema refrigens in the syphilitic affection, the specific treponema pallidum—Schaudinn—is present. Side by side, the distinction between them is not easily possible. In such a dubious case it

is advisable to puncture the swollen lymph nodule. In syphilis the presence of *treponema pallidum* can be demonstrated without difficulty after some little experience. Both cases showed a typical papular exanthema on the whole body. In the course of the disease a rare complication, double orchitis, occurred. The exanthem and the orchitis disappeared after treatment with mercury. The parents of both children were healthy. In one case the child had been infected by the gardener, who was suffering from syphilis and who took his meals with the boy.

The fourth case shows how easily syphilis may be contracted by quite innocent persons forced to live under unhygienic conditions.

Triple Venereal Infection from one coitus is rare. A case of this has lately been reported.¹ The patient was a man who appeared rather indifferent to his state of infection, having entered the hospital merely for bronchitis. It was only through a close and complete examination that the discovery was made that he had a gonorrhea with a considerable purulent discharge in which the gonococci were numerous; besides this he had a suppurating balanoposthitis with phimosis which, however, permitted of the discovery of an erosion indicative of a chancroid. Besides, an examination of the pus showed an abundance of the characteristic Ducrey-Unna bacilli. The infectious coitus dated back about 2 months and was the only one. But the question could be asked if, in addition to gonorrhea (which on the other hand was singular on account of its indolence, the patient never having had pain in urination, a thing which occurs in most cases) and outside of the simple chancre, he did not also contract a syphilitic chancre that was hard to recognize in that inflammatory and indurated mass. The induration, in the chancre, is a good characteristic of the syphilitic nature of the lesion, but it is often difficult to determine and it can hardly be considered as pathognomonic in such a case, except in certain localities in which its characteristics may be easily noted. But aside from this sign there is a special one which almost never fails and this is the induration of the inguinal glands. This adenopathy, usually bilateral, not painful,

(1) Amer. Jour. of Derm., May, 1909,

consisting of separate ganglia which roll under the finger, and not adherent, is really pathognomonic, for it is only found in syphilis with these characteristics. Now in the patient, it was typical and it presented all the characteristics that Ricord was the first to describe and whose study was perfected by Fournier. Its constancy is almost absolute, as this last author states that in 5,000 city patients observed by him, who had syphilis, he has observed the primary bubo which he called the "pleiad of Ricord," fail in but 3 cases. So that under those conditions the patient was considered syphilitic and treatment by means of daily injections of biniodid of mercury was inaugurated at once. It was but a few days later that a very discrete roseola was discovered upon the sides only of the chest and it was found because it was sought with care, and after all lasted but 4 or 5 days. Roseola is, at times, very ephemeral; however, this fact, here, may perhaps be attributed to the very early treatment which may even prevent any eruption at all. In a recent case in care of a colleague this occurred, and that which proved that the patient really had syphilis was the fact that he transmitted it to his wife. There is some advantage, when a diagnosis is made certain, in treating the patient as soon as possible; for in that manner we mitigate or totally suppress certain symptoms, in some cases at least, for there are many in whom this preventive action does not show itself. In the case just detailed, double phlebitis declared itself but was finally overcome.

Gumma Contagion is reported by M. Verel¹ from a patient who in April, 1900, had a chancre followed by roseola and secondary symptoms. As no symptoms occurred during the years that followed, marriage was decided upon in 1905. On April 29, 1905, he married a perfectly healthy virgin. In July, 1905, the man felt pains in the glans and saw developing at the place which had been the site of the chancre a small swelling which softened, suppurated and healed without treatment. October 13, 1905, the young wife presented a hard edema of the left labium majus, without showing the trace of a chancre, but with vulvar papules, buccal mucous patches

(1) Amer. Jour. of Derm., May, 1909.

and a pregnancy apparently in the fifth month. She was placed under mercury salicylate injections. November 29, 1905, she returned, having borne a dead child of eight months. The post-mortem examination of this child did not reveal syphilitic lesions, and presence of *treponema pallidum* could not be established. During the time following her confinement the woman showed syphilitic symptoms which appeared in abundance, and the injections were resumed. Verel saw the woman later. Treatment of the symptoms continued till October 24, 1906.

Eyelid Chancre. Charles Pache¹ reports indurated chancre of the eyelid. It was impossible to determine the possible mode of infection. Contamination at a distance by a stream of saliva would be a particularly disheartening method of acquiring syphilis. It may, perhaps, be admitted that, under certain conditions, the *Spirocheta pallida* may penetrate through a mucous membrane without a solution of continuity being visible in the latter. The question is certainly an interesting one. On the other hand, we note another case of an analogous nature which is remarkable for its etiology. The case occurred in an Arab, in Algeria, who, a month previous to the report, had his eye scratched by a thorn which entered that organ. At the time of examination he presented on his conjunctiva a round, indurated lesion, which at once aroused the idea of a syphilitic chancre. Inquiry elicited the fact that a few hours after the penetration of the foreign body, the thorn was removed by two Moorish women who, successively, passed their tongues in the upper conjunctival cul-de-sac. This procedure of licking is commonly employed in Algeria, among the natives, as it is in Russia among peasants, as well as in other European countries, for the removal of foreign bodies in the eye. In Algeria there are certain Moorish women who have acquired great dexterity in this disgusting practice. After the thorn had been removed the patient felt relieved at once and for 2 or 3 days he felt no more inconvenience. Three weeks later the pains recurred, becoming more marked day by day, the eye became injected, weeping, and at the end of 10 days had attained the swelling seen when he was ob-

(1) Amer. Jour. of Derm., May, 1909,



DORSAL ASPECT.



PALMAR ASPECT.

PLATE IV.

ULCERO GUMMATOUS SYPHILIDE—SYPHILITIC DACTYLITIS

Occurring in an American clerk, aged 25; infection 7 years ago; beginning of present lesion 4 years ago; healing process has been rapid under hypodermic injections and internal administration of "mixed treatment" combined. (*From the Dermatologic Clinic, Post-Graduate Medical School, Chicago.*)



PLATE V.

MULTIPLE CHANCRE.

Double Hunterian chancre on penis; chancre of finger; occurring in a 27-year-old American tinsmith; spirochetes found in all three lesions. (From the Dermatologic Clinic, Post-Graduate Medical School, Chicago.)

served. The attending physician looked up the Moorish women and found that one of them presented undoubted secondary lesions. The syphilitic chancre of the conjunctiva is usually located at the larger angle of the eye, and at times at the external commissure. Those of the conjunctiva properly so called, the palpebral or bulbar, are quite rare. The method of contagion in the reported case by the practice of licking is not unknown by any means. Cases of this nature have been reported often but it is always well to mention such, that they may serve as reminders of the method of infection and lead to more exact and minute examinations of cases.

Face Syphilis. According to A. Ravogli,² the pallor and the sallow color of the skin at the beginning of the constitutional period of syphilis is well revealed on the face. The patient cannot conceal that color which shows the affection of the general system. The first eruption, the macular syphilide, usually known as roseola, not infrequently affects the face. Roseola is seen to cover the trunk and extremities, but only somewhat rarely affects the forehead in the form of reddish hyperemic spots, of the size of a finger nail, and of short duration. It is interesting to mention that at the beginning of the constitutional period a brownish seborrheic condition is often developed. Many sebaceous glands are on the nasolabial fold and on the chin. These take on a special activity and produce a dirty brownish-red color, from an increased secretion of the glands, which, together with a superficial scaliness of the epidermis, produces greasy rusts. Not rarely, the roseola recurring on the face, especially on the chin and the sides of the face, assumes a livid and infiltrated appearance. Involution takes place in the center of the patch, leaving circular lesions in the form of well-defined rings, which have been called *roseola annularis* or *figurata*. Papular syphilide is often seen on the face in all its forms and sizes. In the first the eruption has a bright hue, but soon takes on a mixed shade of dark blue or dark brown color. At times the efflorescence becomes so pale that it differs only slightly from the normal skin. Papules of the size of

(1) Lancet-Clinic, May 22, 1909,

split peas occur on the forehead, near the edge of the hairy scalp, of a brownish-reddish hue, which has given to the eruption the name of *corona veneris*. In some cases large papules the size of a bean, and the color of a biscuit or crust of bread, make their appearance in an irregular manner on the forehead and face, few in number and scattered. These giant papules, appearing as the first symptoms of the general affection, are usually considered as the omen of severe symptoms. Papules affecting the bearded face come so close together as to form thick patches, red, scaly and covered with greasy crusts. In some cases they resemble the vulgar sycosis and it is not easy to make the differential diagnosis unless helped by the other accompanying symptoms. In some cases exudation takes place at the apex of the papules, in the form of vesicles, which soon dry up and form scabs. This condition is often found in the hairy scalp and on the face, which has been called papulocrustous or papulopustular syphilide. In some cases the papules become hemorrhagic, and the eruption assumes a brown-bluish tinge, which lasts, and, although the papules have been involved, a dark-brown pigmentation remains for a long time. Papules, when on the mucous membranes, change their appearance, become flat, eroded and secrete fluid serum, and are better known as mucous patches. We may see these modified papules at the angle of the eyelids, of the nostrils, of the mouth and on the lips. Gradually, as syphilis becomes older, the lesions assume the characteristic tertiary forms. They have a tendency to appear isolated in the form of superficial dermal nodules on the nose or around the nostrils or the lips. The difference between a papule and a gummata is in the nature of the infiltration. The first will be reabsorbed without leaving a scar, while the second usually ulcerates and leaves a permanent scar. On the nose, ears and around the mouth, through conglomerating superficial gummata, ulcerated patches are produced, which sometimes may be mistaken for lupus, at other times for epithelioma, but the eye of the expert is able without much difficulty to recognize the luetic origin. Large subcutaneous gummata often appear on the forehead in the form of dark-bluish protuberances, often resembling ab-

scesses. Likewise conditions have been observed in the orbit, as periosteal gummata, which suppurated, protruding above the upper eyelid, pressing the bulb of the eye downward.

Gummata frequently affect the nose in its integument, which, persisting, often lead to the destruction of the nasal cartilages, with resulting deformity. The cartilages and bones of the nose are more frequently destroyed in consequence of the ulcerative process starting from the skin or from the mucous membrane. According to the bones affected and destroyed, the nose assumes peculiar shapes. When the septum is destroyed it has a triangular shape, and that of a sunken nose when the perpendicular plate of the ethmoid bone has been lost. In cases of malignant syphilis the syphilitic infiltration may be destroyed by gangrene, causing enormous destruction in the form of gangrenous gummata. In one patient the lower lip fell into gangrene, due to necrosis of the diffused gummatous infiltration. In rare cases elephantiasis of the upper, and in one case of the lower lip, originates from chronic syphilitic infiltration. The pathologic changes which take place in the blood and lymph vessels, together with the effusion of infiltrating elements, cause a stasis of the lymph, with some organization of the connective tissue elements, causing an abnormal swelling of the lips, with hideous deformity of the patient.

Nose Syphilis particularly in the tertiary stage, is very misleading according to W. Thrasher,¹ who reports the case of a 48-year-old spinster who in July, 1906, consulted him for nasal stenosis of several years' duration. She was somewhat anemic. Both nares were blocked with grayish-red granulation tissue, which sprang from the septum and both middle and lower turbinals. It resembled, macroscopically, primary nasal tuberculosis, except that the granulation tissue was slightly firmer and had a little more color, and was comparatively dry, while in the tubercular cases the hyperplastic tissue is more friable and covered with a mucopurulent secretion. There were no other objective symptoms at this time, except a slight induration

(1) Lancet-Clinic, May 22, 1909,

of the anterior cervical glands, nor were any observed for 3 months. Microscopic examinations, made by two men a month apart, showed, they claimed, a small round-celled sarcoma. During the next 3 months the nose was operated upon three or four times, each time followed by rapid recurrence. Trypsin injections were used and tonics given. The septum became indurated and finally a perforation appeared in the posterior portion of the cartilaginous septum. She decreased in weight and the cachexia increased. One day she called attention to a dermal rash on her forearm. This was an erythematous syphilide of a purplish copper hue, which probably had been present for some time but overlooked. It seems somewhat anachronous to find an erythematous syphilide accompanying a lesion of the nose, which rarely appears before the latter half of the secondary or the first part of the tertiary stage. Under antisiphilitic treatment the hyperplastic tissue in the nose rapidly disappeared and the gummatous infiltration and induration of the septum receded. Within a short time the nose was normal except a small perforation of the cartilaginous septum. In the second case a 28-year-old man applied for relief from a "chronic cold in the head." The coryzal symptoms had persisted for about 4 weeks. Examination of the nose revealed a septal shelf on the left side just above the floor and hypertrophy of both lower turbinals. Thrasher attributed the catarrhal symptoms to this condition, and removed the shelf with the drill and reduced the turbinals with the electrocautery. At the end of 2 weeks, when the septal wound had practically healed, there was a slight tumefaction of the septum one-half inch above the septal wound and at the junctions of the cartilaginous and bony septum. The infiltration rapidly increased on both sides of the septum, and in a few days had some of the appearances of a septal abscess. Thrasher, considering the appearance of the septum, febrile disturbance and general malaise, thought that he had a streptococcus infection from the shelf operation. Not until a small focus of necrosis appeared on either side of the septum at the point of greatest bulging did he suspect that he was dealing with a gummatous infiltration, nodulation and ulceration of the septum. The patient admitted infection, 3

years previously, but having had systematic treatment did not associate the present trouble with the past. The pathologist who examined a specimen from the necrotic area said: "While it is not a typical epitheliomatous picture, I should advise close watching for any appearance of malignancy." Under vigorous antisymphilitic treatment the gumma rapidly subsided and the general health improved. When seen later he had no other symptoms except a diffuse scaling syphilide of the palmar surfaces.

As the gummatous nodule develops primarily under the perichondrium, the swelling of the septum will be bilateral, and in this way, until necrosis of the membrane takes place, resembles a septal abscess.

Differential diagnosis between a septal abscess and a gumma is usually not difficult. A septal abscess usually has a history of traumatism. Careful palpation will reveal a localized collection of pus in the septum, while a gummatous nodule imports a doughy, soggy feeling.

The initial lesion, when situated in the nose, is not as difficult to recognize as syphilitic hyperplastic fungoid growths or developing gummata, but quite frequently the macroscopic appearance and the pathologic report of a chancre are misleading and erroneous.

The third patient, a married woman, presented herself with a small growth springing from the lower portion of the septum of the left side. From microscopic examination, its extreme vascularity and rapid increase in size it was pronounced a sarcoma. Preparations were being made for its removal when the rapid enlargement of the cervical lymphatics and the appearance of a syphilitic dermal rash showed that there was an initial lesion on the septum of the nose which had taken this unusual form. The macroscopic appearance of this chancre was very misleading, for it resembled a cauliflower-like growth in some respects, and had none of the characteristics of a chancre. The woman's husband had syphilis.

A chancrous erosion is often mistaken for a herpes pro-genitalis, and it is not uncommon for an extragenital chancre, especially one on the skin, to be pronounced tubercular. An extragenital cutaneous chancre of the hand, in a boy of 13, was pronounced tuberculous in char-

acter, notwithstanding the presence of luetic ocular manifestations, a slight erythematous syphilide, syphilitic granulation tissue in the pharynx, intralaryngeal hyperplasia causing aphonia, and some induration of the epitrochlear, axillary and cervical glands. Potassium iodid and mercury hypodermically cleared up the manifold symptoms in a very short time, proving conclusively that this case was specific in character. The patient received a systematic course of treatment for several months and then discontinued treatment after the disappearance of symptoms. He returned later with a typical pustular syphilide covering the face and upper portion of the body, which rapidly cleared up under antisymphilitic treatment.

Acute coryzal symptoms are valuable diagnostic factors in approaching or developing gumma of the septum. The secretion is mucopurulent in character when the lesion is malignant or tubercular, while a gumma in the stage of induration and infiltration is accompanied by a thin serous discharge and other symptoms of an acute coryza.

The septum is the favorite location for gummatous formations, but occasionally the outer wall, including the turbinals and floor, will be attacked by gummatous ulceration. This condition, when not accompanied by other symptoms of syphilis, is very likely to be mistaken for an epitheliomatous growth.

In the fourth case, a middle-aged man presented himself with an extensive ulceration involving the lower and middle turbinals of the left side and a portion of the upper lip. The original ulceration began in the nose and had been curetted twice for the removal of cancer. At the time Thrasher saw him the appearance was that of a rapidly extending epithelioma. The area involved was so extensive as to contraindicate operation. To gain time to study the case, and with the possibility in mind that it might be specific in character, the patient was given small doses of bichlorid and 15 grains of iodid 4 times daily. Owing to a mistake in labeling the bottle at the dispensary, the man was given $\frac{1}{4}$ grain of bichlorid and 60 grains of iodid 4 times daily. He returned at the end of 10 days badly salivated, but the ulceration had begun to

heal. Under proper treatment he made a complete recovery.

Thrasher has seen cases which undoubtedly would have resulted in an ulcerative condition similar to the one just described had antisypilitic treatment not been instituted at the proper time.

This gummatous hyperplasia of the entire nasal mucosa, which frequently causes almost complete stenosis, might be mistaken for a simple hypertrophy were it not that the septum is thickened quite as much as the turbinals. The membrane is lighter, or paler in color, and the secretions more abundant and purulent in character than in those where the thickening is due to simple hypertrophic cell changes. In one case this condition of the nose was the only evidence of lues to be seen. The patient complained of hypersecretion and nasal stenosis. Both sides of the nose were closed on account of general hyperplasia and infiltration of the membrane covering turbinals and septum. The membrane had a doughy, soggy appearance and was pale, but not as light in color as cases of hyperesthetic rhinitis, and the secretion was abundant and mucopurulent. He had been treated 4 years previously for syphilis, but had not been very faithful. He was advised to use an alkaline spray, and referred back to the doctor for constitutional treatment. Vigorous mixed treatment cleared up the symptoms mentioned within a short time.

Thrasher reports a case of a prosperous 50-year-old German, the father of 9 healthy children, who became imbued with the idea about 6 years ago that he had contracted syphilis in some way and that the septum of the nose was undergoing necrosis which would eventually destroy the entire nose. He was strong and vigorous physically, but extremely neurotic. His nose was practically normal and entirely healthy, and he never had a sign or symptom of syphilis in his life. His mental and nervous symptoms increased to such an extent that Thrasher suggested a trip to Europe. Marked improvement followed a change of scenery and surroundings, but he occasionally needs assurance that his nose is free from the ravages of syphilis.

Treatment of Nervous Syphilis and Paresyphilis. According to D'Orsay Hecht,¹ semeiology of nervous syphilis includes syphilitic arteritis, meningitis and gummata. The nerve tissues themselves are not affected. It is the circulation and the supportive framework that are involved in degenerative changes occurring a considerable time after infection. Such are tabes and paretic dementia. Syphilis stands in direct and indirect causation of these diseases. The finding of the spirocheta pallida and the use of the Wassermann reaction aids us in diagnosis, and the therapeutic measures should also improve. Neither routine nor a haphazard administration of mercury or iodids is commendable. Mercury and iodids are of the utmost value, but must be combined with supportive measures and re-education of muscles in ataxia. Mercury by inunction is the best method of administration. The uselessness of mercury and iodids alone in paresyphilitic paretic dementia was long ago pointed out by Luys,² J. G. Kiernan,³ E. C. Spitzka⁴ and others, while upon the vasomotor factors as therapeutic indications, peculiar stress was laid.

Arylarsonates in Syphilis. F. J. Lambkin⁵ reports 34 cases of syphilis treated by arylarsonates with good results and without untoward effects. After a course of arylarsonates, mercury, preferably in injections of metallic mercury, should be employed. Soamin was used in 26 cases. This is a para-aminoarsonate, having the formula $C_6H_4NH_2AsO(OH)(ONa)5H_2O$; in fact, it approximates very closely to the original preparation atoxyl. It has the advantage over the latter in that its purity can be assured. These 26 cases had their full course of soamin, which consists of a total of 100 grains, and in only two were there the slightest bad effects (cases 15 and 16); both as recorded showed slight toxic symptoms after they had had their eighth injection. The fact that the patients concerned were over 50 years of age might possibly account for the effects.

Eight were treated with the arylarsonate known as

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- (1) Medical Record, June 12, 1909.
 - (2) Maladies Mentales, 1881.
 - (3) Alienist and Neurologist, 1883.
 - (4) Insanity: Its Classification, Diagnosis and Treatment.
 - (5) Lancet, Dec. 5, 1908.



PLATE VI.

TUBERCULO-SQUAMOUS SYPHILIDE.

Occurring in a painter 30 years old; the interesting feature is the early appearance of this type of eruption three months after infection; the primary lesion is still present. (*From the Dermatologic Clinic, Post-Graduate Medical School, Chicago.*)

"arsaceticin," which is a sodium acetyl-phenyl-arsonate. ($C_6H_5NHCH_3CO$). $AsOOHONa$ =arsaceticin. The preparation, according to Neisser, is certainly far less toxic than atoxyl, both healthy and diseased animals tolerating very much larger doses of arsaceticin than of atoxyl. As far as it is possible to make any comparison as to the remedial action on syphilis, he thinks there is no doubt but that everything favors arsaceticin. "No decomposition of any kind in the solution, even when stored for a long time, could be detected, nor does boiling daily alter the solutions in any respect." Lambkin gives 40 minims of a 15% solution every second day. This is equal to 7 grains of arsaceticin. The preparation can be employed in either a 10% or a 15% solution. The latter has the advantage that it does not require the injection of so large a quantity of fluid and consequently the temporary painfulness in the locality of the injection is slighter. There is, however, this disadvantage, that the 15% solution deposits the salt when cold, so that before use it is necessary to heat it to bring it into solution. Arsaceticin possesses advantages over soamin. Its solutions do not decompose; hence it is unnecessary to make them up fresh daily as is the case with soamin.

Atoxyl in Kala-Azar. Atoxyl has been found of decided value in one case of Kala-Azar fever by A. McKay.¹ The dose given was 9 grains daily. Kala-Azar fever is usually fatal. The patient made a good recovery.

Ammonia Uranate, according to A. Weil,² is of value in syphilis both as a mercurial adjuvant and singly. Ammonia uranate, which is known in commerce as uranium yellow and employed in the industries as a ceramic pigment, is but slightly toxic, contrary to the other salts of uranium which are so in a high degree. It possesses very clear radioactive properties, which seems to indicate that it acts upon the nervous system in which the syphilitic virus seems to quarter itself. It is employed in the same manner and doses as calomel; that is to say, the uranate of ammonia which is chemically pure is suspended

(1) Edinburgh Med. Jour., Dec. 5, 1908.

(2) Amer. Jour. of Derm., March, 1909.

in sterilized vaselin in the strength of 5%. A cubic centimeter of this solution corresponds to 5 centigrams of uranate of ammonia. The injections are made with this oil once weekly in the buttock; they are in no wise painful and have never brought about any untoward symptom. It has been possible to continue them for 2 months and very much longer (up to 30 injections consecutively) without inconvenience or dangers of intoxication. The trial of the remedy has been made on 50 patients, but the observation of the patients was not made for a sufficiently long time except in 39 cases. In all save one the action of the remedy was particularly fast. The average length of treatment was $2\frac{1}{2}$ months, but the cure was beyond dispute. The slight toxicity of ammonia uranate gives it an unquestionable therapeutic superiority. In this respect it is much superior to mercury. From the point of view of curability of lesions, yellow oil possesses in certain cases an action as rapid as that of the most active mercurial salts.

Mercury Insufflation in Syphilis. Cronquist¹ has had good results from the following procedure: He uses hydrargyrum cum creta, or a finer powder containing 40% of metallic mercury. Of this powder 4 gm. are to be inhaled daily, in the form of a snuff, at four different intervals. A fifth may be given, but never more. This method of inhaling mercury is one that might become popular in snuff-taking countries, but hardly in others. In addition, the irritation to the nose is apt to be serious.

Gray Oil in Syphilis. Pernet² states that in intramuscular treatment of syphilis it is very important to use a properly made sterilized standard preparation. Gray oil is now official in the French Pharmacopeia. The formula is: Purified mercury, 40 gm.; anhydrous wool fat, pure and sterilized, 26 gm.; medicinal oil of petrolatum sterilized, 60 c.c. This is put up in small glass stoppered bottles of 1 c.c. of the preparation, containing practically 40 cg. of mercury.

(1) Amer. Jour. of Derm., May, 1909.

(2) Lancet, July 24, 1909.

Mercury: Internal Administration, Inunction or Injection in Syphilis. According to E. C. Hay,¹ all three methods should be combined at different periods during a full course of treatment. A course of treatment in the early inception of syphilis should start either with inunctions or injections and be followed by internal medication, instead of the pill or internal treatment being given first, and followed later by injections and rubs, as advised by most modern textbooks. The brilliant results to be obtained in the prevention of future accidents in any case are to be accomplished in the first year's treatment. Hay has formulated the following routine to be pursued in cases of syphilis as they ordinarily run: **First Year.**—Two courses of either inunctions or injections, covering a period of 2 months each; after each course of treatment a month's rest should be allowed and then internal medication 2 months during the interim up to within a month before resuming the second course, whether inunctions or injections, making 4 months rubs, 4 months internal treatment, 4 months rest. **Second Year.**—Two courses of rubs or injections 6 weeks each; two courses of internal treatment, 8 weeks each; two courses of rest, 6 weeks each, and two of 4 weeks each, making a total of 3 months heavy rubs or injections, 4 months pills, and 5 months rest. **Third Year.**—Treatment every other month, alternating between the internal and more intense methods. **Fourth Year.**—Six weeks of inunctions or injections. **Fifth Year.**—Four to 6 weeks of inunctions or injections. All three methods should be used in treating any case of lues. When first instituting treatment after infection, either inunctions or injections should be employed, followed by internal medication, instead of treatment with pills first, followed by more heroic methods, as advised by most of the leading writers. The inunctions, on an average, are superior to the soluble injections, and more lasting in their effects. The insoluble salts are too intense and profound to be employed in routine and should be held in reserve for rebellious cases and for cases in which rapid and pronounced mercurialization is desired. Finally, the long course of treatment should be pursued in all cases. The

(1) Jour. Am. Med. Assoc., Aug. 28, 1909.

six cardinal points in the therapeutics of syphilis are to keep a close observation of the weight, kidneys, bowels, stomach, gums and nervous system, especially the latter, as some patients will never manifest any evidence of mercury in the form of stomatitis and the first evidence one has is a profound and acute nervous prostration.

Syphiloid Diseases are just now looming up in nosology. One of the sixteenth century much discussed was the *morbus Brunno-Gallicus* in 1578, which, in 3 months, attacked 40 persons in Bruenn and almost a hundred in the suburbs; a considerable number of the country people were also affected. This disease presented symptoms similar to those of syphilis. The disease was generally supposed to have been promulgated by baths, and the practice of cupping in common use by the inhabitants. Thomas Jordan, the historian of this epidemic, draws a very gruesome picture of the appearance presented by those afflicted with it. The mind and the limbs lost all power of performing their functions. There was pallor of the face and putrid ulcers soon appeared. Pustules occurred upon the body, the face became hideous, mournful looking, the eyebrows dropped out, the face, back, chest, abdomen and the feet became the seat of a scabby formation, ulcers but slightly elevated above the skin being present. The pains which existed were excruciating and permitted no rest. The nights were sleepless until complete exhaustion permitted the wornout members to rest, in a more or less refreshing sleep of short duration. Various remedies were tried for this disease; but the following method seems to have been generally successful: After having bled the plethoric subjects, and given some purgative medicine, decoctions of guaiacum, turpeth mineral pills, and the expressed juices of wild endive and of fumitory were administered, while the ulcers were dressed with mercurial ointment. This syphiloid disease has also been known as the Moravian epidemic, and it appears to have been essentially syphilitic in nature from its symptoms and the fact that it was so amenable to mercurial treatment both internal and local.

Another disease which aroused a certain amount of interest among medical men, at the beginning of the last century, was *Sibbens*. It was observed in Scotland, par-

ticularly in Ayr, Galloway and Dumfries. According to Gilchrist, Sibbens showed itself under several forms. Sometimes inflammation of the velum palati and surrounding parts took place, accompanied with a white eschar or superficial bright red ulcer. At the same time aphthæ or small white spots or eschars often occurred on the velum palati or insides of the cheeks. Small elevations of a pearly or milky color also usually appeared on the commissures of the lips. Often, too, a very small excrescence or fleshy growth developed, resembling a raspberry, and which became covered with a crust. This growth was an almost certain indication of the disease, even when the sore throat did not exist. Trotter compared its appearance to that of toasted cheese. Another form of this disease was that of destructive ulceration, which often caused the entire loss of the velum palati, and the death from inanition of infants at the breast, deglutition becoming impossible. Sibbens occurred in other cases of the skin and under different aspects. Sometimes the whole surface of the body was spotted and clouded with a coppery, dusky red blush. At times a cluster of pustules appeared, over which several successive desquamations of the epidermis took place. Scabby eruptions of the hairy scalp, forehead, inner surfaces of the thighs, etc., appeared accompanied with little hard lumps in the thickness of the skin and an unpleasant itchiness. At other times tumors similar to furuncles were seen on the arms, shoulders, face, legs and feet, giving rise to ulcers that perforated the whole thickness of the skin and lay bare the muscles, which they sometimes also corroded. Adams believed that these ulcers were the result of the immediate contact of the virulent matter proper to the disease. Finally, the soft and spongy tumors, raspberry in form (whence the name of Sibbens or Sivvens, which is derived from Sibbens—raspberry), are the last symptoms of the disease; they do not seem to occur in all places alike, for several other forms of the disease were observed; several, indeed, which Gilchrist had never seen. According to Gilchrist, the bones were not affected in this disease. Bell, on the contrary, speaks of nodes and caries. Sibbens was rarely communicated by sexual intercourse; alterations sometimes seen in the genital organs took place consecutively. The

disease was frequently transmitted by nursing, and the common use of the same utensils, the use of the same pipe, for instance. The almost complete silence of writers after the first decade of the nineteenth century seems to show that the disease became extinct at about that period. The treatment bore a great resemblance to that employed in syphilis. The good effects of it led to the classification of Sibbens as a syphiloid disease by the older authors.¹

Among other syphiloid diseases was that of Bay St. Paul, Canada, between the years 1776 and 1780. This disease, denominated *the disease of the Bay of St. Paul*, *le mal de Chicot*, *le mal des écoulements*, appeared in Canada, particularly in the Bay of St. Paul. According to Bowman, who was sent by Governor Hamilton to investigate, it was announced by a number of small pustules on the lips, tongue and the inside of the mouth. These pustules, which resembled small aphthæ, advanced rapidly. Children were seen whose tongues were almost entirely destroyed by them. The whitish and puriform matter they contained communicated the infection to those who touched it. There were nocturnal pains in the bones, which generally subsided when the ulcers appeared on the skin and in the interior of the mouth; cervical, axillary and inguinal buboes were often met with; at a more advanced stage the body was covered with pruriginous tetters which soon disappeared. The bones of the nose, palate, cranium, pelvis, thighs, arms and hands became affected with nodes and caries. The functions became greatly disordered and the senses disturbed. The patients died a prey to the most acute sufferings. Some, however, stood this complication of infirmities for many years, dragging on a most miserable life; entire limbs were sometimes known to sphacelate and fall off. The frightful disease spared no one, but it raged with peculiar virulence among children. Decoctions of the roots of *patrientia*, of *arctium lappa* and *sarsaparilla* were the usual remedies. A decoction of a species of fir, or beer composed of a decoction made with the branches and bark of the pine of Canada (*Pinus Canadensis*), was also used. The inhabi-

(1) Amer. Jour. of Derm., August, 1909.

tants of some parts of Canada, and, among others, those of the Bay of St. Paul, where the disease spread extensively, pretended that it was brought among them by the English. The disease rarely attacked the organs of generation and was contracted without any actual intercourse with individuals affected with it, even without touching them immediately. This did not imply that it could not be acquired by direct contact irrespective of the manner in which this contact occurred. Bowman's description recalls to Swediaur the account which the writers of the fifteenth century gave of syphilis.

The similarity to *schierlievo*, to be considered next, is striking. It was attributed to four sailors, who were supposed to have brought it from Turkey. It appeared in 1800 in the districts of Scherlievo, Gronemica, Fiume, etc. It was supposed by others, again, to have been imported in 1790 from Kukulianova by a peasant named Kumzut. A short time after his return his father and mother were affected by it, and afterward propagated it in Scherlievo, etc. The disease spread with so much rapidity in 1801 in the provinces of Buccari, Fiume, Viccodai and Fuccini that of a population of about 14,500 more than 4,500 were affected with it. A committee of physicians appointed in September, 1801, found more than 13,000 persons affected with it in a population of 38,000. It reappeared in 1808 and 1809, raging especially in Scherlievo, where it seemed to be kept up by the filth of the lower orders, whose damp cabins were shared by domestic animals. This disease usually commenced with lassitude and pains in the bones of the arms, thighs and spine, which increased during the night; the voice soon became hoarse and deglutition difficult; the face flushed; the velum palati, uvula, tonsils and sometimes the pharynx and larynx were red. Soon after an aphtha appeared, burst and discharged an ichor, which eroded the neighboring parts; small ulcers formed which united and created a sore of various dimensions, but always of a round shape and an ashy color, with hard, raised and dark edges. These ulcers in some cases evolved with great rapidity, covering the uvula, the tonsils, the velum palati and the surface of the cheeks and lips. Caries af-

fecting the bones of the nose, when very fetid pus was discharged. The voice changed more and more until entirely lost. The exostoses, which had appeared from the beginning, occasionally but rarely shrunk and vanished along with the pains that accompanied them as soon as a pustular eruption evolved upon the skin. Lambini reported 4 cases in which pains in the bones became more violent, notwithstanding the treatment employed, and lasted throughout the disease. When Scherlievo commenced with a pustular eruption, it was, according to Bouc, announced by violent itching, which lessened as the eruption came to an end. The pustules were of coppery color, round and of various extent. They most frequently appeared on the forehead and hairy scalp, but also on the inner surfaces of the thighs, legs and arms, and around the anus and genitals. An acrid ichor sometimes flowed from them, which inflamed the skin. This sometimes dried and formed scabs. The disease often remained stationary thus. After the scabs had fallen off, the skin retained marks of a coppery hue, difficult to remove. Scherlievo has begun with various sized coppery blotches, in the center of which ulcers were seen, from which matter poured out, that by drying formed scabs similar to those covering the pustules. These blotches were generally surrounded by an areola of a coppery hue. The female genitals were more frequently the seat of disease than those of men. Cambieri found one case of gonorrhea which came on after the desiccation of the pustules of the skin, and disappeared as soon as the eruption was restored. The ulcers which so frequently eroded the scrotum always appeared secondary to the general infection. Scherlievo was seldom the consequence of sexual intercourse but usually the effect of simple intermediate contact: the clothes, table utensils, such as glasses, forks, napkins, etc., and an atmosphere charged with the breath of those infected were all sufficient for infection. Some children brought the disease with them into the world or had it communicated by the nurses who suckled them. Buboes in the groins, or swelling of any of the other lymphatic glands, were rare. When it appeared as pustules, spots or ulcers in the mouth it readily yielded to anti-venereal remedies. The prognosis was unfavorable

when patients had been weakened by fruitless treatment or by previous complaints, when the ulcers had reached gangrene, when they occasioned caries of the bones, or when the patients were debauched, indulging in intemperance and neglect of personal cleanliness. Treatment of syphilis did not, in any particular, differ from that of syphilis. One writer found that mercury bichlorid, given in the syrup of casinier (composed of senna and sarsaparilla), proved the most effectual means of subduing it. When caries attacked the bones the treatment might be concluded with advantage by 10 or 12 mercurial frictions. Opium combined with mercury was employed with complete success against the pains of the bones. Proto-chlorid mixed in the cerate with which the ulcerated pustules were dressed and a dilute corrosive sublimate solution, used as a gargle or wash to the ulcers of the mouth, always expedited the cure.

Uta is the Peruvian title of a disease attacking the face and nose and is distinct from lupus, syphilis, tuberculosis and leprosy, according to A. Ashmead.¹ The clinical and bacteriologic details given are insufficient to form an opinion as to its nature except as to its being phagadenic.

Bubois of Paraguay, according to Zanotti Cavazzoni,² is a disease of the skin characterized by chronicity and is very rebellious to treatment. There is extensive and deep ulcerations very destructive and corroding, at times eating through the muscles. It takes root most frequently in the extremities. Those afflicted with it have also the anchylostoma duodenalis. The germ is a trypanosome.

(1) Amer. Jour. of Derm., July, 1909.

(2) Rousski Vrach, January, 1909.

CHAPTER VII.

GENITO-URINARY MEDICINE AND SURGERY.

Prostate Vesicle Cyst. N. A. Mikhailoff¹ reports the case of a 28-year-old sexually neurasthenic Russian. While the family history was negative, the left side of the face and skull was flattened, causing marked asymmetry. The patient was tall and well built. He had never had lues, gonorrhea or other infectious disease. Sexual desire occurred at 10; emissions at 13. These were always painful and the patient tried to prevent them by sleeping with a board tied to his back. After 26, pollutions became less frequent and less painful, but were followed by very severe headache, sometimes lasting for 48 hours. One year ago the patient had sexual intercourse for the first time. Ejaculation was accompanied by such a disagreeable sensation that he refrained from the act. Both knee-jerks are exaggerated. The external genitals are normal. Urination is very frequent, the quantity of urine passed every time being small. The right lobe of the prostate gland is atrophied, the left normal. The right seminal vesicle is easily palpable, the left one cannot be felt. Urinary examination and cystoscopy are negative. Local anesthesia with a 2% cocain solution was used, and a Casper's urethroscope, size 28 of Charrière's scale, with a Mercier curve, was easily passed and showed only some passive hyperemia at the posterior part of the urethra. Further on the instrument met with an obstacle. Instead of the usual colliculus seminalis a round tumor resembling a cyst appeared, the superior margin of which was clearly defined, while the lower one could not be distinguished. The tumor was about 1.5 by 1 cm. in size. When the instrument was pushed further the tumor seemed to disappear, but reappeared when the instrument was pulled back a little. The

(1) Medical Record, Jan. 16, 1909.

walls of the cyst were opaque, reddish-gray in color and were covered with a prominent network of engorged capillaries.

The patient was operated upon a few days later. After anesthetizing with cocain, Mikhailoff passed the urethroscope, then seized the apex of the tumor with forceps and dissected it out with a knife made especially for the occasion. The contents of the cyst were scanty, yellowish-gray in color and contained much albumin. The sediment contained a few epithelial cells and some red blood corpuscles, but no spermatozoa. Soon after the operation the patient's pollutions became quite painless, urination was less frequent and more copious, and the general health much improved.

Prostatectomy and Spermatogenesis. According to Sureda,¹ Perearman, Compan and Bartrina, the prostate has an internal secretion which has an influence that it exercises upon the rest of the genital apparatus, and more especially upon spermatogenesis. Prostatectomy in the dog does not suppress erections in them, nor the balanopreputial secretion. The internal secretion of the prostate has a preponderating action on spermatogenesis.

Prostatectomy should not be undertaken, according to H. T. Herring,² unless the symptoms present are definitely ascertained to arise from that organ and from nothing else. Urinary symptoms are very frequently attributed to the gland, when, in fact, they come from quite a different cause. For instance—and this, perhaps, is the most common mistake—a patient complains of occasional retention, hemorrhage, pain, etc.; a rectal examination is made; the prostate is found to be enlarged and is straightway accused, without further search, of being the cause of the trouble. What is the result? During the operation for removing the offending member a stone is found in the bladder, which could easily have been removed by lithotripsy and the patient restored to health in a week, whereas he is now condemned to pass through an unnecessarily severe ordeal. In skillful hands the x-rays will nearly always eliminate such errors, even when the sound has failed to

(2) Amer. Jour. of Derm., May, 1909.

(3) British Medical Jour., July 17, 1909.

reveal the true cause. Prostatectomy should be deferred until after treatment by catheter has been tried. The patient may recover his power, or he may decide, when he knows exactly what to expect, to continue treatment. No harm can come from a delay for a month or more, and in septic cases much good will result, for the patient will improve and be in a better condition to bear the operation. Afterward, if the catheter fails or is found too irksome, recourse can be had to operation. When the patient is comparatively young, in good health and has many years of life before him, operation is very rightly advocated as soon as it is proved that catheter treatment will not cure. The same may be said of those who, owing to their position in life, calling or lack of funds, are unable to carry out the few simple details necessary in sterile catheterization. Prostatectomy undoubtedly is the best treatment when the prostate, by its mere size, has largely encroached upon the bladder space, and there is no residuum. The urine is clear and free from all signs of sepsis, yet the patient has constant and urgent calls to pass water both by day and night. Finally, the operation may be necessary in certain cases where the prostate is constantly bleeding and filling the bladder with clots which interfere with instrumentation and endanger the patient's life.

Prostate Hypertrophy. Etiology. According to A. Rothschild,¹ prostate hypertrophy is due first to a chronic inflammatory focus about the excretory gland ducts of the prostate, which are narrowed or totally occluded thereby, and second to the effect of this narrowing or occlusion of the gland ducts, retention, dilatation and cystic degeneration.

Chromocystoscopy in Prostate Hypertrophy. R. Paschikis² reports 16 cases of urine retention from prostate hypertrophy where the functional renal capacity was shown by systematic chromocystoscopy. This enabled the surgeon to sift out cases where prostatectomy was useless. The urine was examined for chlorids, urea, specific gravity and albumin. Then 4 c.c. of a 4% suspension of indigocarmin

(1) Berliner klin. Woch., July 5, 1909.

(2) Wiener med. Woch., May 20, 1909.

in salt solution was injected into the gluteal muscle. The interval before blue urine became apparent, the intensity of the tint and the length of its appearance were noted. When this indigocarmine test shows that conditions are improving under systematic catheterization or permanent drainage, the kidneys are approximating normal function. It is amazing to note the improvement in patients so debilitated that permanent kidney lesions seemed probable. Systematic repetition of the test reveals cases where prostatectomy promises permanent benefit. In 4 cases the test showed impairment of kidney function at first, but improving rapidly under treatment. After prostatectomy the test gave constantly normal findings, showing that operation had produced complete restitution.

Prostate Calculus is reported by J. P. McGowan¹ in a 53-year-old man who had at 33 an acutely painful swelling in one of his testicles which lasted about 2 weeks, the cause of which he is unable to explain. Dysuria has persisted ever since, growing steadily worse, the desire to urinate growing more frequent during the day. He suffered more or less discomfort from his bladder from time to time until his forty-sixth year, when the desire to pass water became so frequent and painful that he was unable to obtain any rest night or day. He lost flesh, food was most objectionable. At 53 the desire to urinate was constant. It was difficult to start the stream. The act was intensely painful. The urine flowed in drops and the pain accompanying and following the passage of any urine, however small in quantity, was most intense. The urine itself was loaded with pus and mucus but perfectly sweet.

There was a hard oval mass in the scrotum, which at first glance had the appearance of a syphilitic orchitis, but it was found to originate in the perineum and was located above, behind and between the testicles, measuring 5 inches vertically, 2 inches anteroposteriorly, and about $2\frac{1}{2}$ inches transversely, stony-hard in consistence and first noticed about 3 months before as a small hard lump about the size of a plover's egg, which has steadily increased to its present size and without any discomfort except for its

(1) Amer. Jour. of Derm., July, 1909.

bulk. Digital examination of the prostate revealed a stony mass the size of a hen's egg, studded with small hard nodules the size of a pea. This very unusual condition combined with the scrotal tumor left a doubt as to a stone in the prostate or a sarcoma with secondary involvement of the perineum. Still the duration—about 23 years—excluded sarcoma.

The patient was placed in the lithotomy position, an anterior urethrotomy with the Maisonneuve instrument was done and a guide passed down to the stone, which was pinned under the pubic arch so compactly that it was impossible to pass this point except with a filiform. A median perineal incision was made through the deep urethra, which was practically fibrous throughout, and the stone revealed, absolutely free from any covering in the shape of a capsule. It was the author's conviction that the stone would be found encapsulated within the prostatic capsule. A careful digital examination disclosed a complete destruction of that tissue. The stone was easily grasped by the forceps, but the perineal wound was not sufficiently large to permit of the delivery of the stone. A lateral incision from the posterior end of the perineal wound to a point midway between the anus and left tuber ischii enlarged the wound and nearly doubled the space through which the stone was easily delivered.

The stone weighed 13 drams and 2 scruples and measured $1\frac{1}{2}$ inches in its longest diameter, $1\frac{1}{2}$ inches antero-posteriorly, and $1\frac{1}{4}$ inches in width.

The bladder sphincter proved to be intact, but no trace of a prostate could be made out. The sinus in the scrotum was freely opened and the whole thoroughly irrigated with Thiersch's solution. A rubber drain, No. 40, was introduced into the bladder and the wound packed. The patient was back in bed within half an hour after the operation was begun. He stood his anesthetic well and spent a perfectly comfortable night. The following morning his temperature was normal, bladder draining perfectly, and his wound sweet and dry.

It was his first comfortable night in 23 years. Four days after the operation a No. 26 French was passed through into the bladder and the tube withdrawn. The

thirteenth day after the operation, perineal wound was still open, no urine having escaped by the natural route. An attempt to pass a No. 14 French was unsuccessful. It was found that the strictures of the anterior urethra had united, and a second anterior urethrotomy became necessary. This was performed. April 20, patient was passing urine through the natural channel.

Seminal Vesiculitis Mimickry of Appendicitis is reported by T. G. Youmans.¹ The appendix is supplied by the sympathetic through the superior mesenteric plexus. The vesicles are supplied by the hypogastric plexus. The superior mesenteric sympathetic plexus has an intimate connection with that portion of the gangliated sympathetic cord which lies over the origin of the lumbar nerves. As the genito-crural nerve arises from the first and second lumbar nerves, the connection between the superior mesenteric plexus and the genito-crural nerve is therefore direct. The deferential plexus, a derivative of the hypogastric plexus of the sympathetic, supplies the involuntary muscle of the spermatic structure. A branch of the genito-crural nerve, which supplies the cremaster muscle, accompanies the duct, and thereby gives us a connection between the innervation of the seminal vesicles and the abdominal wall, from which the cremaster fibers are originated. The hypogastric plexus and the superior mesenteric sympathetic plexus are connected by the great gangliated sympathetic cord, so that we have a circular nervous mechanism, which includes the superior mesenteric and hypogastric plexus and the genito-crural nerve. Any part of this is connected by a short and direct route to any other part supplied by these various nerves.

In 1902 Youmans was consulted by a young man 23 years old. He had never had sexual intercourse, although he had practiced masturbation to a high degree. Beginning at 15, he averaged once a day for the first two years. Imagining that it was hurting him, he cut it down to once or twice a week; later on to once or twice a month. He continued the practice at intervals of longer and shorter duration until within 6 months before Youmans saw him.

(1) Ohio State Med. Jour., Feb. 15, 1909.

At this period the operation had become so painful that he ceased masturbating. About 2 years before consulting Youmans he began to notice a slight burning and itching around the scrotum. Following this, he began to have radiating pains down the inner side of his thighs. These pains were transferred to the sacrum, being later shifted to the symphysis pubis. The following year he began to have what appeared to be attacks of intestinal colic. He had dieted and taken various medicinal agents directed toward this apparent bowel affection. His pain later localized itself in the right iliac region, so that he became conscious of continual discomfort in that quarter. For several months he had several exacerbations of the attacks, associated with nausea, coated tongue and flatulence. A physician made a diagnosis of appendicitis. A surgeon called in consultation concurred in his diagnosis and urged operation. Gall-stones, renal colic and floating kidney were excluded. Patient was prepared for operation the following day. The appendix on exposure was found to be normal and was returned. The incision healed rapidly, but the patient's condition grew steadily worse. The pain continued, dyspeptic symptoms increased and he lost rapidly in weight. Diagnosis of intestinal tuberculosis was made, with unfavorable prognosis. The itching of which he first complained reappeared, becoming acute. Crawling sensations in the skin made their appearance. He developed a general pruritis that words will not describe, involving his entire body. He was a mass of scabs and bleeding surfaces and was unable to sleep.

The itching and radiating pains along the inner side of thighs, with history of excessive masturbation, led Youmans to suspect involvement of the seminal vesicles. The stubborn and persistent pain over the appendix perplexed Youmans. Knowing that we have a wide range of reflex disturbance in seminal vesiculitis, he felt encouraged to believe that if inflammation of these ducts did exist, the obscure pain would disappear as resolution took place in the vesicles.

Examination of the vesicles showed them to be distended, without any induration. They were soft and easily compressible. Over an ounce of non-purulent, jellified

vesicular material was expressed. The procedure caused the patient to feel very faint, although after the immediate effects of the manipulation had passed away, he began to feel relief. After a comparatively short period of treatment the vesicles regained their muscular tone, the general pruritis was abated, and the pain in the region of the appendix disappeared. In 6 months he regained his normal weight and his dyspeptic symptoms, pruritis and sensory disturbances were entirely relieved. He is free from all symptoms.

The second case was in a 48-year-old man who was taken suddenly with colicky pains on the right side, accompanied with nausea and constipation. For some time past he complained of a dead, aching pain in the region of the appendix, which nauseated him. He found himself drawing up his right leg at night in order to afford relief from the pain. He was extremely nervous, with occasional headache. The skin was dark and sallow. He was very dyspeptic, his diet requiring constant attention.

This man consulted a surgeon, who made a diagnosis of chronic appendicitis. Operation within 24 hours was recommended. The patient asked for consultation. Another surgeon was called and made the following statement: "I won't say you haven't appendicitis, but I see nothing to indicate the need of immediate operation." He did not express an opinion as to the cause of the trouble, but in order to keep the case under observation he requested the patient to remain in bed. While nothing new now developed, the pain continued. It was impossible for this man to attend to his business until he could obtain some relief. Youmans was called in. The patient gave history of a stubborn attack of gonorrhea of fifteen years standing. Examination of the vesicles showed them to be tender, distended and inflamed. Much material, associated with pus and blood, was expressed from them. The case remained with Youmans 10 weeks. At the expiration of that time the pain in the region of the appendix had disappeared, and his appetite, general nutrition, nervous tone and digestion were markedly improved. He left with instructions to report at regular intervals for treatment. At the end of this time the vesicles were much improved, but were not

restored to a completely normal condition. He continues to report for occasional treatment.

Penis Deformity. Slight curvatures of the penis, sometimes associated with its deviation from the median plane of the body or with more or less twisting, are not very uncommon. Usually they are apparent only in the erect condition of the organ, with the efficiency of which in copulation they do not generally interfere. M. Bilhaut¹ reports the case of a baker, 51 years of age, who sought relief from a deformity of the penis which rendered sexual intercourse impracticable. The proximal two-thirds of the organ were permanently in a state of sharp curvature with the concavity directed upward. In the flaccid state the distal third hung down so that the entire penis had a sigmoid shape; during an erection this dependent portion became continuous in direction with the ascending arm of the permanently curved part, so that the entire organ had very much the shape of the letter U.

Two little tumors of the corpora cavernosa were found near the junction of the curved and the pendulous portions of the penis. It was thought that their presence had given rise to retraction and thickening of the dorsal aponeurosis of the organ, and they were removed. The operation was followed by complete restoration of the normal shape and efficiency of the penis. The tumors were of the nature of those that have been described as plastic indurations of the corpora cavernosa, usually thought to occur as an expression of gout or diabetes. The patient was not diabetic.

Hypospadias. Carl Beck,² of New York, remarks: "It is never too early to perform the operation for hypospadias. The parents, if they only knew the serious features of it, very rarely would object to operation." In children the instruments generally used for plastic operations are too clumsy, a thumb forceps of ordinary size for instance being apt to tear the thin infantile membranes. Retractors holding the reflected skin flaps must hold the tissues without injuring them. The knives for dissecting out the urethra,

(1) N. Y. Med. Jour., July 4, 1909.

(2) N. Y. Med. Jour., Aug. 14, 1909.

as well as the bistoury used to perforate the glands, must be of a special and delicate construction. All that are needed for that purpose are a small, short scalpel for the dissection of the urethra from its bed, a long bistoury for the perforation of the glands or the penile substance, two toothed thumb forceps, delicate blunt scissors curved on the flat for blunt dissection, two toothed retractors, two specially adjustable holding forceps, which may serve as retractors at the same time, two small elastic artery clamps, various thin needles, sharpened on both sides up to the eye, a special needle holder, and a rubber catheter provided with a perforated shield. This set may also be used for other delicate plastic operations in the genito-urinary sphere as well as on other parts of the body.

The after-treatment is simple if no catheter is employed, and this should be the rule. Since it is difficult to keep any penile dressing *in situ*, Beck uses a T-shaped piece of dermatol gauze with a central opening (through which the catheter is eventually pushed). This gauze strip is provided with a number of lateral openings which permit of passing some of the sutures, that is, the upper and lower sutures around the new orifice after being knotted are left long for the purpose of fastening the gauze strip. After the ends of the knotted sutures are pulled through the gauze strip, placed alongside the posterior surface of the penis, they are tied and cut short. The two dissected ends of the strip are now carried around the penis and pulled through the lateral openings and knotted or held together by a safety pin. With a mild Burow's solution the gauze may be saturated several times a day.

Constriction of the penis by an Esmarch bandage was never found necessary. If dissection of the urethral tissues is done step by step, hemorrhage will always be moderate. Whenever the surface bleeding is copious, temporary pressure by a small gauze compress suffices to permit of the gradual continuation of the operation.

Plastic Surgery in Hypospadias. Hypospadias has been successfully treated by transplantation of a portion of a vein to serve as a urethra. The operation is one to be done preferably on adults, but possible in young persons. The same method may be applicable in cases of epispadias.

According to C. von Emden,¹ Carl Beck's operation for hypospadias has the following advantages: A single operation usually suffices; healing is better assured than by the methods previously in use; and the fact that the entire penile urethra is surrounded by cavernous tissue favors the normal ejaculation of semen.

Intermittent Priapism. D. Bouveryran² has reported 3 cases of chronic intermittent priapism. One was that of a man who after a gonorrhea developed intermittent priapism of fifteen years duration. Every night he had erections extremely painful and long continued, not relieved by coitus. He had no sexual desire. Copulation was "a terror." Everything had failed. Lumbar punctures were performed, followed by "injections" of electrical currents. All measures proved alike ineffective. Finally division of the penis dorsal nerve was proposed. It was explained that such an operation would forever do away with the possibility of an erection. The man gladly accepted the proposal, but his wife vetoed it. The second case was similar.

Inflammation of the Verumontanum. According to J. A. Hawkins,³ the verumontanum and its contents, the utricle and the ejaculatory ducts, are not a part of the prostate, but have a distinct wall of their own and lie outside of the true capsule of the prostate. No matter which perineal operation is used in the removal of the prostate, unless the floor of the prostatic urethra is removed, the utricle and the ejaculatory ducts are seldom destroyed. The verumontanum is evidently quite richly endowed with nerves both from the spinal and sympathetic systems.

Inflammation of the verumontanum is usually due to gonorrhea affecting the deep urethra. Probably 90% of all patients suffering with gonorrhea acquire an extension to the posterior urethra and many of them to the seminal vesicles and epididymes of necessity by way of the ejaculatory ducts. Inflammation of the verumontanum is impossible of differentiation from prostatitis or vesiculitis without urethral examination. The most common symp-

(1) La Presse Med., Jan. 27, 1909.

(2) N. Y. Med. Jour., Sept. 4, 1909.

(3) N. Y. Med. Jour., Aug. 14, 1909.

tom or which the patients complain is pain in the anterior 2 inches of the urethra. This pain is of a stinging or burning character and leads the patient to believe that his trouble is located in the anterior rather than in the posterior urethra. In some cases a frequent desire to urinate is observed. To this is added a desire to evacuate another drop or two after the bladder has been emptied. In some cases there is marked tenesmus with the appearance of a little blood with the last drop of urine. A fullness or heaviness in the deep urethra which may be reflected to the rectum is a symptom frequently complained of by the patients. Shreds are usually but not always present in the urine. The urine today may be full of shreds and tomorrow absolutely clear, and again in a few days full of shreds. Irritation of the sexual apparatus is usually marked. Continued erections without apparent cause, even while the patient is waiting for treatment, have been observed. Later, from prolonged irritation, the opposite train of symptoms appear—loss of desire for sexual indulgence, weak erections, premature or delayed ejaculation. With the occurrence of ejaculation the patient is often annoyed by sharp pain of varying degree in the deep urethra or reflected to the rectum or perineum. Examination of the prostate and vesicles may show them to be normal. Usually the prostate is somewhat enlarged. The vesicles may or may not be engorged.

In no case of acute inflammation of either the anterior or posterior urethra should the urethroscope be used.

The appearance of the verumontanum as seen through the tube is a rather dark red elevated process about 3 mm. high and 2 mm. wide at its base. The utricle may be seen, but the openings of the ejaculatory ducts rarely. When inflamed the verumontanum assumes quite a different shape. In some instances it is simply enlarged, being 5 mm. high with a uniform width of 5 mm., or even larger. In other cases it will be enlarged in but one direction and leaning well to one side, resembling an inflamed uvula. In other cases it will assume a bicornate appearance. In others it may have a granular appearance. When inflamed it usually bleeds quite freely when touched with the cotton

mop, but the pressure of the walls of the tube window tends to prevent hemorrhage.

Silver nitrate will produce results if intelligently used. Solutions varying in strength from 1 to 20% are readily borne and are extremely useful when properly used in the various stages of these inflammations. With a solution of 15 or 20% the swollen verumontanum is promptly reduced in size. In some cases the surface seems to dry up and separate, similar to an eschar from the site of a burn, but leaves no deformity. Treatment should not be applied oftener than once a week, but in the meantime instillations of 2% solution 3 or 4 days after each strong application hasten the result. These strong solutions are applied, of course, on cotton mops, and their action is limited to the part attacked, but in nearly all cases it is well to apply the same solution to the deep urethra anterior to the veru.

Veneraeal Malingery by Convicts are the methods of malingering employed by convicts for the production of conditions closely simulating venereal and genitourinary diseases.¹ Thus a syphilitic eruption is imitated by placing two or three pieces of sweet almond the size of a pin's head under the prepuce. They are left in position for 2 or 3 hours, then removed after this lapse of time. The sore must be left without any cleansing, that is to say without washing of any sort for 24 hours. By this means the prisoner succeeds in having an eating chancre. Another method consists in placing a lighted cigarette under the foreskin and keeping it there as long as the pain can be endured. Then a piece of alum is rubbed on the burned part; this forms a small white skin which is removed with a pin; the sore which remains imitates perfectly the chancre. In order to obtain a discharge the scrotum is rubbed with the hull of an almond, a procedure which makes it swell. The skin disappears and the scrotum is raw, that is to say, forms one sore. Then a piece of the bark of the sacred wood (guaiac) is taken and introduced in the urethra, which swells at first, and small pimples then form in the inside of the urethra. From these pustules there flows a purulent material which leads the physician

(1) Amer. Jour. of Derm., June, 1909,

to conclude that he has to deal with a patient who has an attack of gonorrhea. Another method is one which by means of a lighted cigarette, following the method described above, causes mucous patches in the mouth, on the toes, as also on the buttocks. To simulate stricture of the urethra two small pieces of cork of a triangular shape and of the size of a small green pea are introduced in the urethra up to the testicles. Care is taken to drink 4 or 5 quarts of water or some other liquid; when coming to be examined the patient complains of inability to pass his water since 2 or 3 days; when the physician passes a catheter or sound into the urethra, the instrument meets a hard body which is nothing but the pieces of cork. The physician believes in a stricture, once the examination made, the patient goes to urinate and, by using but a slight force, the pieces of cork come out. The trick has been successful and the prisoner is satisfied.

Bladder Tuberculosis, was, as E. O. Smith¹ points out, believed to be an ascending process, and not secondary to kidney tuberculosis. More careful investigation has proven that these theories are incorrect. Bladder tuberculosis is almost always secondary to that of the kidney. The bladder is rarely the primary seat of tuberculosis. The infection rarely reaches the bladder from the essential organs. W. Karo claims that positive evidence cannot always be obtained even by examination of the urine from each kidney, collected from the urethral catheters. This method is valuable, but is not always positive. Furthermore the symptoms of bladder tuberculosis do not necessarily differ from those of other diseases of the urinary organs, such as dysuria, varying in degree, pyuria and hematuria. Careful examination of the bladder when these symptoms are present is imperative even though the patient may be apparently strong and healthy. The urine should be examined for tubercle bacilli. If no tubercle bacilli be found, a guinea-pig should be inoculated and watched for 14 days. Should this test not show bacilli, it does not prove that the disease is not tuberculosis. It is possible that the ureter from the diseased kidney may have been temporarily

(1) *Lancet-Clinic*, June 26, 1909.

closed, and the urine examined come from the normal kidney.

Every case should be carefully examined cystoscopically. Inject a 2% solution of novacain and adrenalin to calm the irritability and pain that are so characteristic of bladder tuberculosis.

In advanced cases the bladder cannot be dilated for satisfactory examination. If the case be not too far advanced, primary changes are at the ureteral opening of the diseased kidney. The picture presented varies from small red spots covered with mucus to very deep and extensive ulcerations. Sometimes there is a swelling of the mucous membrane, which may obliterate the ureteral opening. The anterior and upper part of the bladder are seldom involved. The internal sphincter usually escapes infection. The finding of small gray nodules of miliary tubercles around the ureter is not positive proof of tuberculosis. On the other hand, the healthy appearance of the area about the ureteral orifices does not prove the integrity of that kidney.¹

In addition to cystoscopy and urine examination from each kidney for tubercle bacilli, the functional power of each kidney should be determined by the use of phloridzin and of the indigo-carmin injections.

Early recognition of kidney tuberculosis will generally prevent the secondary infection of the bladder. The prognosis of bladder tuberculosis depends upon the possibility of removing the diseased kidney. By nephrectomy even advanced cases of bladder tuberculosis will heal without special treatment. The first few days after the removal of the kidney a slight increase in bladder symptoms may occur. In most cases this subsides in a very short time, the urine becoming clear and micturition less frequent.

In addition to nephrectomy, systematic tuberculin treatment is helpful. The most reliable local treatment consists of bladder irrigation with a very weak solution of mercury bichlorid.

Painful distension of the bladder should be avoided. Pain caused by the sublimate solution may be obviated by the use of morphin and warm sitz baths. The method recommended by Hollaender, of injecting calomel into the

(1) Detroit Med. Jour., May, 1909.

bladder and of giving potassium iodid to the patient internally, has proven unsatisfactory. It causes more pain and is less effective. Use of carbolic acid is also very unsatisfactory. The operation of removing the portion of mucous membrane from the bladder through the suprapubic opening is seldom attempted now. Narcotics are much more serviceable for pain than this operation.

E. O. Smith has met a few cases of bladder tuberculosis secondary to renal which did not improve after the removal of the kidney. In most cases there were evidences of pulmonary tuberculosis. In one case the prostate gland was involved.

Three cases are reported by G. McGowan¹ where there existed obstruction of the outlet by growths which, mushroomlike, sprang up on a tuberculous focus, within the bladder or the prostatic urethra, and simulated true bladder tumors, and which illustrate very well the extremely virulent tuberculous process that gives rise to such growths. While the thorough removal of these granulomata is rendered obligatory when they interfere with or prevent the act of urination, great care should be exerted to leave no unnecessary raw surfaces; for every such space is vulnerable and will be attacked by the bacilli. Healing of the wounds will be slow in any case and perhaps never take place in some.

Epididymis Tuberculosis. According to E. C. Cumston,² there is indicated conservative epididymectomy in genital tuberculosis which does not yet involve the testicle. This has proven to be the case frequently. Necropsy statistics of Reclus show that tuberculosis infects primarily the epididymis, and involves the testicle through a secondary extension of the process. Of 68 cases, in one-third the process was limited to the epididymis and in all but one of the remaining two-thirds, both epididymis and testicle were involved, and in this one the testicle alone was involved. Positive proof of involvement can be secured by splitting open the testicle. If found free from disease it can be sutured with fine catgut and removal of epididymis car-

(1) *Annals of Surg.*, June, 1908.

(2) *Annals of Surg.*, June, 1909.

ried out by blunt dissection, being careful to preserve the spermatic arteries to testicle. This is followed by the same improvement in lesions of the prostate and seminal vesicles, evident by examination and by lessening of such symptoms as follow early castration. The advantages of epididymectomy over castration are preservation of the testicle, which continues to supply its internal secretion, although sterile. The second testicle may later become involved and castration there be necessary. The statistics of Reclus show the infection to be a descending epithelial one, extending from the prostate or seminal vesicles to the epididymis rather than through the blood.

In acute cases, which usually involve both epididymis and testicle and which usually end in suppurative testicular disintegration, early castration is advisable. As in other cases in which the testicle is involved, it is important to remove the vas deferens as high up as it can be dissected free to complete the operation.

Cancer of the Genito-Urinary Organs is discussed by M. Legueu,¹ who points out that in all lumbar nephrectomies for renal cancer, but one cancer recurred within 24 months; whilst of two incomplete lumbar nephrectomies in which diseased glands were detected at the time of operation, but were left in place, one survived 18 months and another more than 3 years. Recurrence is generally local. In one instance it was noted in the skin. Commonly it occurs in the fatty capsule which has been left. Recurrence was seen when the fatty capsule and neighboring involved glands had been removed. Of 6 transperitoneal nephrectomies, 4 recurred within 2 years; two could be traced for only 11 and 15 months respectively. Twice there was recurrence at a distance, in one instance secondary to a hypernephroma, death occurring 2 years later with pulmonary metastasis, and in another case death occurred 8 months after operation, with profound cachectic symptoms, the point of recurrence not being determined.

Eiselberg states that of 13 cases subject to nephrectomy, 8 died from 2 to 34 months after operation. Of the remainder, one reached the fifth-year limit. Of 400 cases cited by Fargue, 29 remained well for 4 years after opera-

(1) Ann. de Mèd. des Org. Génito-Ur., No 28, 1908.

tion. Four of these were children. Should probation be raised to 5 years this figure drops to 18. Discouraging though these figures seem, 18 apparently cured cases must be considered. Early diagnosis and massive removal is the essential surgical basis. By massive removal is meant kidney and fatty capsule extirpation with removal of associated lymphatic glands, and the suprarenal body. Legueu prefers the Gregoire incision. The patient is placed in the flexed dorsolateral position, incision is made from above the middle of Poupart's ligament toward the anterior superior iliac spine and vertically upward to the costal border, and backward along this for a distance of 5 or 6 centimeters. This cut is carried down to the peritoneum, and the latter is stripped from the posterior abdominal muscles of the iliac and the lumbar fossæ. The perirenal fibrous capsule is cut in its outer border and the fatty capsule is stripped from its anterior and posterior attachments without being cut or torn, until the vascular pedicle of the kidney is reached. This, if the tumor be voluminous, is ligated, after which the ganglia are ablated. If the tumor be small the ganglia are taken with it in one mass, including the suprarenal capsule. The involved glands will be found in the right side around or behind the vena cava; in the left side in contact with the aorta, between the celiac axis and the inferior mesenteric vessel. In Paris two such operations have been performed, one for hypernephroma without ganglia, and the other because of a cancer with involvement of the ganglia. Neither recurred.

In bladder cancer, carcinoma and sarcoma, Legueu reports the same tendency to recurrence as in renal cancer, which he attributes to late diagnosis and incomplete removal. Remote metastases are late and rare. Recurrence occurs at the point from which the cancer is removed. This is due to the fact that the cancer cells are not all removed. Hence the necessity of early diagnosis, and then wide removal, including all the thicknesses of the bladder walls. This is perfectly practicable and usually simple, excepting when neoplasms involve the bladder near the ureteral orifices.

Cystectomy for bladder cancer is rarely justifiable. The

immediate mortality is high. Of the 31 cases reported, but 2 were alive at the end of the first year.

Concerning malignant prostate disease enucleation by the perineal route is the most practicable, the technic perfected by Young being the best, though the prognosis as to recurrence is gloomy. Urethral cancer has recurred even after total emasculation.

Operation for penis cancer with the exception of that for sarcoma is fairly satisfactory. Amputation is a better operation than total ablation, and should be accompanied by extirpation of the inguinal glands.

In tumors of the testicle the prognosis can be outlined by histologic examination. Mixed tumors which do not present evidence of malignant degeneration do not recur. Those which present but few degenerative points may remain permanently well. Those which are frankly malignant almost inevitably recur.

Operation in Total Genital Tuberculosis. M. Pauchet¹ reports 5 cases of total genital tuberculosis (prostate, seminal vesicles, vas deferens, epididymis and sometimes the testicle), treated by extirpation. He advises operation when touch reveals large seemingly suppurating vesicles. The nodules felt in the prostate correspond to the ejaculatory orifices and should be excised. The operation is not dangerous or difficult for those who have done perineal prostatectomy. It has two stages. The first is an inguinal stage when the subject should be placed on an inclined plane and an incision made like that of inguinal hernia but longer. The vas deferens should be dissected to the bladder. The peritoneum is not opened. The vas deferens should be severed by the thermocautery between two ligatures. In the perineal stage a transverse incision should be made before the anus. The rectum and urethra should be stripped off as well as the bladder base. The seminal vesicles and vas deferens should be dissected from above downward. A corner of the prostate should be excised. The perineal wound should be brought together without suture. The inguinal wound should be sutured without drainage and collodionized. For 8 months after a urinary fistula usually persists. Relapses have as yet not resulted.

(1) *Gaz. des Hôp.*, June 22, 1909,

Bladder Implantation Cancer. S. Suzuki¹ reports the case of a man, 43 years of age, who died with the clinical diagnosis of tumor of the left kidney. On autopsy it was found that he had a neoplasm of the left suprarenal gland which had penetrated into the kidney and secondary deposits in the liver and in the mucous membrane of the bladder.

Prostate Cancer in its early symptoms mimics, according to D. Loree,² senile hypertrophy. Cases with an infiltration predominating from the first have certain characteristics evidenced by cystoscopic examination of the bladder base and digital examination of the seminal vesicles, after the invasion has gone beyond the capsule, and can hardly be regarded as early in the disease. Whether malignancy is suspected or not, the hemolytic action of the blood should be studied in all cases. Under certain conditions, when an extensive pathologic examination can not be made immediately, or a more thorough subsequent search reveals cancer, the operation may be performed at two sittings. In those cases in which the lobes enucleate easily with the finger, if a malignant process exists, it will be confined to the interior of the lobe or lobes and the necessity of a more radical operation will not be apparent.

Testicle Hemorrhage. V. W. Low³ reports two cases of testicle hemorrhage in a paper before the London (Eng.) Medical Society. April 17, 1907, a 19-year-old boy complained that 2 days previously his left testicle became swollen and painful. He attributed this to his trousers being too tightly braced up. When this was remedied the pain ceased. There was no evidence of gonorrheal infection. Provisional diagnosis was made of gonorrheal epididymo-orchitis. A week later he was seen again. The pain, tenderness and testicle swelling persisted. Careful examination failed to discover urethral infection. The scrotum on the left side was red and edematous; the testicle and epididymis were enlarged. It was difficult through the edematous scrotum to distinguish one from the other. The vas was normal. Nothing abnormal could be felt in

(1) Berliner Klin. Woch., Feb. 15, 1909.

(2) Jour. Am. Med. Assoc., July 24, 1909.

(3) Clinical Journal, March 31, 1909.

the prostate and vesiculæ seminales. There had been no history of mumps. He presented no evidences nor was there family history of tubercle. The case was considered to be one of testicle and epididymis tuberculosis. Removal of the organ was advised. This was done on May 7. The patient made an uneventful recovery.

The testicle was of a gray-black color. There had been considerable hemorrhage into the substance. The attachments were normal. No evidences of torsion could be found. No traces of tubercle were present. The testis and epididymis were enlarged. The digital fossa was well marked; there was no displacement of the epididymis on the body of the testis. On section the body of the testis was firm and dry and had a uniform gray color. In the region of the rete testis were several small ill-defined hemorrhages. In the epididymis and cord were dilated blood-vessels, but no hemorrhages were here present and no indication of cord torsion.

Microscopically the cells of the tubules in the body of the testis were found completely necrotic. There was only fragmentary nuclear staining. The same change had occurred in the interstitial tissue, which was everywhere rather wider than normal. The blood-vessels were dilated and many of the veins were occupied by thrombi. In the rete testis necrosis was less advanced, and in places nuclear staining was retained; the interstitial tissue was here infiltrated with red blood-corpuscles, and in places there was infiltration also with polynuclear leucocytes.

The arteries of the testis were everywhere patent. There was no disease of their walls. At the margin of the testis was a hemorrhagic zone, outside which was a wide zone of granulation tissue, showing all stages of organization. In places the granulation tissue extended for a short distance into the interstitial tissue of the body of the testis. The epididymis showed no alteration in structure.

The cord showed dilatation and thrombosis of some of the veins. The degree of necrosis varied in different parts of the testis and appeared to have occurred at different times.

The second case was that of a 21-year-old man seen by

Low in May, 1907. In the early part of April, he had occasion to get out of bed in order to unlock the door of the room for his brother. While moving, a sudden, violent pain occurred in his left testicle, of such severity as to cause him to lie on the floor. The pain partially subsided, but all night his testicle was tender, swollen and aching. The next morning he was seen by his doctor, who found the organ swollen and tender and the scrotum red and edematous. He was kept in bed for a week, and anodyne lotions were applied. The pain and tenderness subsided and he was much better, but the testicle still remained swollen.

Four weeks after the attack the testicle was enlarged and slightly tender. There was no redness nor edema of the scrotum. Both epididymis and testicle appeared to be enlarged. At the time, Low thought the enlargement was more marked in the epididymis, which was hard and seemed to be nodular. There was a general thickening of the cord, but no definite nodule could be felt on the vas. There was no enlargement of the vesiculæ seminales nor of the prostate, nor was there present any vesical pain or irritability. There was not the slightest suggestion or suspicion of gonorrhea. The patient appeared otherwise perfectly healthy. There was, however, a bad family history, and the patient was one of the 5 survivors of a family of 11, of whom 2 had died of tubercle. Low thought the case was one of tuberculous epididymitis, and advised that the organ should be removed. This was done May 28. The operation presented no feature of interest. Convalescence was uneventful. There were no tubercular deposits in either testicle or epididymis. The anatomic relations of the cord, epididymis and testicle were normal. There was no evidence of recent torsion.

The body of the testicle was not enlarged, the epididymis was slightly enlarged, and the digital fossa was deep; there was no displacement of the epididymis upon the body of the testis. On section, the body of the testis was firm, and had a caseous appearance throughout; there was slight brownish discoloration in the region of the rete testis. The epididymis and cord contained dilated blood-vessels. Microscopically, in the body of the testis all the tissues

were completely necrotic, and both cell-outlines and nuclei were everywhere gone. The interstitial tissue was somewhat widened. At the margin of the necrotic area was a wide zone of granulation tissue, with newly formed fibrous tissue. The granulation tissue in places was invading the interstitial tissue of the body of the testis. Some of the granulation tissue cells were crowded with pigment granules.

In the rete testis were thrombotic veins and a blood-clot almost completely discolored. The arteries of the testis were contracted and empty, but were patent and showed no disease of their walls. There was a little diffuse hemorrhage into the tissue of the cord, and some of the veins were dilated and occupied by thrombi.

In each case there had occurred a sudden hemorrhage into the substance of the testicle, with consequent destruction of its glandular elements, and in neither case was the cause of this hemorrhage at all obvious. Sudden hemorrhage into the testicle, when it is not an accompaniment of a new growth, is almost invariably the result of torsion, either of the cord or of the "mesentery" of the testicle. But in these cases no evidence of such a twist could be discovered, and, what is perhaps of more importance, the testicle and epididymis were normally attached to the back of the tunica vaginalis. In the normal organ the whole length of the posterior border of the testicle and epididymis is bound firmly to the posterior aspect of the tunica vaginalis by a mesentery formed by the reflection of the serous membrane from the viscus to the parietes. The two layers of this mesentery are widely separated from each other by a quantity of fibromuscular tissue, which is continued down to the lowest part of the sac, and represents the remains of the gubernaculum. It is difficult to conceive how, with the normal attachment, there could be torsion of either cord or testicle. In all the recorded cases some abnormality of attachment of the testis to the cord has been found.

Scudder¹ cites a case of Volkmann's in which there was spontaneous gangrene of the testicle with acute hemorrhagic infarction, and in which no twist of the cord was evident.

(1) *Annals of Surgery*, 1901.

This occurred in a 15-year-old boy, who, without apparent cause, was suddenly seized with severe abdominal pain, diarrhea and vomiting. On the next day the left side of the scrotum was found to be swollen and the pain was limited to the left testicle. Three days after the onset the scrotum was swollen with hard inflammatory edema to twice the size of a man's fist. The left side was of a deep red color and was tender and hot.

An incision was made into the tunica vaginalis and the testicle was found to be swollen to four or five times its normal size, and to be blue-black in color. The wound was left open and the testicle and epididymis became necrotic, gradually dried up and dropped off. No mention is made of torsion, but there was a long mesorchium.

Scudder also quotes 2 of English's cases of hemorrhagic infarction of the testicle and epididymis. The first was that of a 16-year-old boy who in the night had a sudden swelling of the left side of the scrotum without any known cause. The testicle and epididymis became enlarged, the infiltration extending in the cord up to the inguinal canal. The parts were tender and the skin was reddened. The symptoms gradually disappeared and no operation was undertaken.

In the second case, a boy of 17 felt a sensation of pressure in the left testicle and some hours afterward experienced a severe pain. The parts were swollen, edematous, reddened and tender, the tenderness extending up to the iliac fossa. At the operation it is stated that the testicle was found to be attached to the posterior wall of the sac by a broad mesorchium. The testicle and epididymis were bluish-black in color. The tunica vaginalis was drained and the testicle and part of the epididymis ultimately sloughed. Nothing is said in the account of the case concerning any torsion, and it is definitely stated that the cause was unknown.

According to Corner, Warren Low's case was a medley of diseases of the testicle. Somewhat similar cases had been recorded under different names, such as gangrene of the testicle, necrosis of the testicle, spontaneous necrosis, thrombosis of the spermatic cord, embolism of the spermatic artery. The real origination of these cases is still

a matter of doubt. The modern trend of ideas had been to regard them as due to torsion of the cord. In one case no torsion of the cord was found, but microscopically there was seen to be edema, and that edema was sharply delineated by a line differing in color which could be seen with the naked eye, and the cause of that was probably torsion. Torsion of the cord which was suddenly undone did not account for all such cases. He had seen cases in which there was definite evidence to the naked eye of extravasations of blood. If there were not such evidences visible to the naked eye, he would tentatively suggest another explanation, namely, one along the lines of acute hemorrhagic pancreatitis. The cases which Low has brought forward might be acute infective necrosis of the testicle, the infecting organism of which is at present unknown, accompanied by small extravasations of blood not visible to the naked eye. As a rule these cases are impossible of diagnosis, although in some one might guess at the condition of things. But there is one clinical point which, if present, helps, namely, if the case is the result of torsion of the spermatic cord and there is a definite hemorrhage obvious to the naked eye, no translucency is found on applying the test of transillumination. If, however, the case is one of epididymo-orchitis, whether tuberculous or gonorrheal, often hydrocele is present and transillumination shows it. If it is necrosis of the testicle there is no hydrocele.

According to Kellock there was acute inflammation of the epididymis where there was no apparent cause. Gonorrhea was suspected in many of them, but possibly the affection which had been mentioned might exist on a mild scale, and with a patient suspected of epididymo-orchitis there might be a small hemorrhage into the testicle.

Barker remembered a healthy man who appeared to have no trace of gonorrhea. He was walking close to the hospital with a plank on his shoulder when he slipped on a step, and in trying to recover himself kinked his external ring. He entered the hospital within an hour of the accident with a testicle as large as a goose egg, having been very well before. Barker supposed that the man had ruptured a vessel, owing to the pressure of the weight

he was carrying plus the muscular and expiratory effort occurring with the sudden start. The vein had extravasated into the testicle itself. Another case which occurred soon afterward was on all fours with that. He did not think Mr. Low had sufficiently emphasized the amount of strain that such patients suffered from. The rapidity of the inflammation in his cases was very marked.

If Low had known exactly what he was going to find he would not have operated. In the second case the testicle was practically fibrotic. There was some granulation tissue which in time would have formed a fibrotic mass. The first case he operated upon earlier, and in that there was definite hemorrhage. The first case was operated upon within a fortnight of the occurrence, and there was definite hemorrhage, which one could see with the naked eye. The testicle was grayish-black. The hemorrhage was chiefly at the junction of the testis with the epididymis. In neither of the cases was there hydrocele. There was no visible hemorrhage into the spermatic cord, but the veins were dilated and probably contained thrombi; at any rate there was blood-clot. With regard to the strain exerted, the boy in this case was in the habit of wearing two different pairs of trousers, one of which was long-waisted and the other short-waisted. He forgot to adjust his braces accordingly, and when he felt the pain he loosened his braces, but the pain did not cease and the testicle swelled. In the other case the patient jumped suddenly out of bed to unlock a door to let his brother in, and he felt pain in his testicle from that moment. In both the cases there was rapid swelling, and in a future case he thought he would rely on that point in making his diagnosis, as it would probably differentiate it from an inflammatory swelling.

Urine Color varies inversely with the quantity, and is markedly affected by the character of diet; thus meat and strong coffee render it dark, while milk and carbohydrates give a lighter hue. Many drugs tend to give deeper color, particularly on standing (becomes alkaline) and oxidizing, or on the addition of some oxidizing agent, such as ferric chlorid. The phenol derivatives (carbolic acid, cresol, sabol, creosote, guaiacol, tannic or gallic acid, arhovin, re-

sorcin, naphthalin, uva ursi, arbutin, etc.), owing to their pyrocatechin content, give the urine a smoky brown to greenish-black tint; and much the same color is noted in poisoning with trional or sulphonal (hematoporphyrin) cyanids or arsin. Senna and most vegetable purgatives cause a brown color when urine is acid. In hematuria and hemoglobinuria (malaria, scarlet fever) the urine may be smoky or even black. Alkaptan is probably a derivative of tyrosin, and alkaptanuria is often observed in brothers and sisters. In persistent jaundice and pernicious anemia (pathologic urobilin) the urine may be dark brown. Black urine has also been noted in melanotic sarcoma, marked indicanuria (disappears on precipitating with milk of lime), and in some cases of phthisis (after urine has stood a long time).¹

Uro-Ureter from Calculus. According to Byron Robinson,² a ureteral calculus produces uro-ureter in rare cases. If the ureteral obstruction be instant and complete from the calculus the uro-ureter will be limited in dimension and anuria on the side of the calculus results. If the uro-ureter be due to partial obstruction by the calculus its distension of the ureter may be limited by the capacity of the abdomen only. The ureteral calculus may produce obstruction by means of the calculus itself or by a ureteral stricture resulting from ulceration by the calculus and cicatricial contraction. Ureteral calculus is the most liable to lodge at and obstruct the ureteral isthmuses, viz: proximal, middle, distal. Over 50% of calculi obstruct the proximal ureteral isthmus; however, rarely does the calculus produce complete and occasionally it produces partial obstruction and consequent uro-ureter of the proximal ureteral dilatation—calices and pelvis.

Bladder Calculi and Prostatectomy. L. B. Bangs³ reports a case where 44 uric acid calculi were removed from a patient's bladder. The patient had an enlarged prostate and catheterized himself frequently. A cystoscopic examination showed the presence of 3 stones and a fourth one was suspected. Another physician to whom the patient

(1) Denver Med. Times, January, 1909.

(2) Wisconsin Med. Jour., May, 1909.

(3) Medical Record, June 19, 1909.

went after being cystoscoped by Bangs saw 3 stones and was somewhat doubtful of the existence of the fourth. Prostatectomy was done and the number of stones found behind the prostate at the operation simply showed that most of them were hidden from the cystoscope by the upper layer. The patient had no pain whatever and beyond the cystitis and the recent appearance of blood in the urine no symptoms were caused by the calculi.

Vesical Calculus in Women. C. Goodman¹ reports a case with a bougie nucleus in a middle aged widow. Examination with the Thompson's searcher elicited the classical signs of stone in the bladder. A cystoscopic examination revealed a moderate sized calculus and a darker object the true character of which could not be definitely determined on account of the marked turbidity of the fluid in the presence of a severe form of cystitis. The patient was obliged to urinate every few minutes day and night. At times she suffered most excruciating lumbar and hypogastric pain.

Goodman made an opening in the bladder through a suprapubic incision and removed this bougie which was covered with phosphatic concretion and terminated at either end in an olive shaped calculus formation. The base of the bladder was covered with calcareous deposit in which the middle portion of the bougie had become quite adherent. After thorough cleansing of the bladder mucosa the bladder wound was entirely closed with two layers of fine chromic gut sutures. The rectus and its sheath as well as the skin were then united and a small rubber tissue drain inserted at the lower angle. The bladder was drained for 3 days by a catheter introduced through the urethra. The patient was out of bed on the sixth day and the wound entirely healed on the tenth day. A few days subsequent to the operation, the patient stated that 8 months previously a midwife had attempted to help her out of some "difficulty" and that since that time she had been suffering more or less from the symptoms referable to the bladder.

No other method could have given a better result than

(1) Amer. Med., February, 1909.

the one pursued. To have attempted to remove this calculus by the urethra would have resulted in serious and possibly permanent urethral injury. The lithotrite would have been, on account of the makeup of the calculus, useless and unsatisfactory. Vaginal section in the presence of such marked cystitis and with the base of the bladder encrusted with calcareous matter could only have resulted in vesicovaginal fistula with all its evil consequences such as incontinence, constant dribbling of urine and excoriation of the tissues. In the discussion of the case, Ladinski reported the case of a young widow who had been suffering from what was supposed to be metrorrhagia, and was treated accordingly by women physicians for over a year. Vaginal examination revealed a mass in the bladder, which was confirmed by the sound as a stone. The urethra was dilated by Kelley's instrument and the stone removed. On introducing the finger into the bladder, it was found that the stone was incrustated around a hairpin, with the open ends embedded in the wall of the bladder, near the urethral opening. This required greater dilatation of the urethra than would have been necessary for the stone, which was of the size of a walnut, and the patient had a long siege of incontinence and dysuria afterward, but finally recovered completely.

As regards route of entry into the bladder, Ladinski thinks each case should be treated on its individual merits, which depend largely on the size and character of the stone. His personal choice is in the following order: (1) Dilatation. (2) Vesicovaginal resection. (3) Suprapubic operation, if the case is complicated, or the size of the stone requires the upper route.

H. N. Vineberg¹ reports a patient with cervicovesical fistula, operated on once or twice by Paul F. Munde, who finally sutured the cervix uteri into the bladder, thus closing the fistula. The menstrual fluid was not diverted into the bladder. Following this she suffered severe dysmenorrhea with vesical irritation. Cystoscopy (Kelly method) revealed a thick calcareous incrustation encroaching upon the trigonum where the cervix projected. Most of this

(1) Medical Record, Feb. 27, 1909.

deposit was removed with forceps, and the patient obtained relief, but only temporarily. April, 1904, Vineberg did a supravaginal hysterectomy to arrest menstruation, so that with its cessation new calcareous incrustations would cease, but the relief was not as anticipated. Examination of the bladder revealed an area the size of a half-dollar, hard as flint, which could not be dislodged. Accordingly the vesical wound was drained. The suprapubic wound closed in about 3 weeks, and for several months the patient was relieved. The symptoms recurred, and cystoscopy disclosed new deposits of calcareous matter at the old site. August 10, 1908, the base of the bladder was found infiltrated with a hard mass the size of a hen's egg. This was everted into the cavity of the bladder, and the projecting circumference was broken off with bone forceps; then the removal of the remainder was comparatively easy. The mucous surface of the bladder exposed was quite smooth and presented a small polypoid fibroid which was snipped off with the scissors. Convalescence was uneventful; the bladder symptoms gradually improved. In about 2 months the patient was practically cured.

Litholapaxy. According to W. L. Munro,¹ where the stone is not too large nor too hard, where the bladder is not greatly contracted and the condition of the kidneys and bladder is fair, where there is no extensive prostatic disease and the urethra is neither irritable nor strictured, litholapaxy may be performed. It yields the best results in old men under favorable conditions; but if an anesthetic has to be used, as in cowardly patients, it must be remembered that the operation is often greatly prolonged, even to the extent of 2 or 3 hours. Furthermore, the number of operators having sufficient familiarity with the technic is relatively small; hence practitioners of general surgery do well to consider fully the difficulties and dangers attending its performance. Enlarged prostate is not necessarily a contraindication, but might furnish an almost insuperable obstacle to the beginner.

Some of the dangers are: Injury to the bladder walls by being caught between the blades of the lithotrite. Injury

(1) Amer. Jour. of Derm., February, 1909.

to or over-distension of the urethra with resulting incontinence. Rupture of the bladder from rough instrumentation or over-distension. Impaction of fragments in the jaws of the lithorite or in the eye of the evacuator, rendering their withdrawal without injury to the vesical neck and urethra impossible. Failing to dislodge them it would be better to do a cutting operation to free the instruments. Breaking of the jaws of the lithotrite. Owing to the hardness of the stone and the comparatively slender instruments necessary, this occasionally happens and calls for lithotomy. Injury to the bladder from wounds caused by a stone flying forcibly from between the jaws of the lithotrite when they are approximated. The leaving of fragments in the bladder to serve as nuclei for other stones. Inflammation of the various organs in the genitourinary tract and even peritonitis may follow. Most of these dangers are avoided. The patient is about after 2 or 3 days if all goes well.

Bladder Extrophy is discussed by J. Jellinck,¹ who analyzes 177 cases of Maydl's operation, dealing incidentally with the objections thereto. The chief is possible ascending infection. This is counterbalanced by the superior functional results, the high mortality of the non-operated from pyelonephritis or malignant tumors which seem to display a predilection for exposed bladder mucosa, and by the large number of permanently cured patients. The records show 17 cured for over 2 years; 13 for over 3; 7 for over 4; 25 for from 5 to 9 years, and one each for 10, 11 and 12 years. The age at which the operation is performed is an important factor in the outcome; the mortality under 5 was 41%; between 6 and 10, 18%; between 11 and 20, 32.5%; between 21 and 25, 50%; and above this age, 72%. The mortality from pyelonephritis also increased with age from 3 to 9% under 15 to 54% after the age of 25. Sooner or later, 25% of the patients who have been operated on succumbed to this. Careful selection of the cases for operative treatment and improved technic in the means to keep the urine and stools separate will make the outcome still better. In one case the Maydl operation had been done for a tuberculous bladder affec-

(1) Jour. Am. Med. Assoc., Aug. 14, 1909.

tion and the girl married and bore a child later. There are 10 cases on record of pregnancy in women with exstrophy of the bladder, unoperated, as a rule. Other malformations present usually interfere with conception.

Phimosis Calcification appears in a case described by A. McKaig.¹ A 14-year-old boy had the prepuce much thickened and elongated to about 5 inches. Owing to the formation of calcareous material inside, which evidently surrounded the glans, it was difficult exactly to make out its position. The orifice of the prepuce was quite closed and a pin-hole, on the right side of the prepuce about $1\frac{1}{2}$ inches from where the orifice ought to be, was discovered. On micturition the elongated and almost closed prepuce was filled with all the urine of one micturition and this afterward slowly dropped through the pin-hole that has been mentioned. There was some little difficulty in performing an operation, partly caused by the calcareous accumulation and also by an adhesion of the prepuce to the glans. This condition demanded two operations, but the patient was quite well in a few days after the second one which presented the appearance of an ordinary circumcision. A peculiar feature in connection with the case is that, although the condition for which the patient was operated on had lasted 4 years, there appeared to be no bladder trouble of any kind and the deposit of calcareous matter disappeared spontaneously and completely.

(1) *Edinburgh Med. Jour.*, April, 1909.

MISCELLANEOUS

BY

HAROLD N. MOYER, M. D.

MISCELLANEOUS.

HEREDITY.

Fundamental Theories. J. Wright¹ refers to the observations of Bastian recently partly confirmed by Dunbar which show that bacteria or structures resembling them can be produced from liquids which contain no recognizable bacterial forms. He also refers to the observations of Prowazek that algæ after being thoroughly crushed will regenerate the algal structure. This would seem to show that life is not necessarily dependent on the cell unit but may exist in still smaller particles, and that it is the property of living matter which forms the structure of the cell and not the cell structure which makes matter living. The theory that smaller units than the cell, such as determinants, chromosomes, etc., are the active agents in heredity is not satisfactory. It accords more with the trend of opinion to look on these elements as the arrangements produced by force.

"The mosaic conception of heredity, formulated in the laws of Mendel, has still further added to the strength of Weismannism. But how can material units stand for immaterial forces? The bird's wing stands as the emblem of flight, but it is very far from explaining the physical processes whereby it keeps itself in the air. The chromatin granule in the nucleus contains no material subdivision, we may be sure, which does any more. The comprehension of the principles of aviation like that of the principles of heredity receives but slight assistance from the contemplation of such symbols.

"The physiochemical process whereby in natural heritable immunity the phagocyte engulfs the bacterium is a matter

(1) N. Y. Medical Jour., Jan. 9, 1909.

of the index of the electrodynamic surface tension of each. Its variation is a character of living things which is heritable. How are we to figure to ourselves the heredity here involved by means of material units? It is the dynamics of the cell, not the phosphorus nor the calcium nor the oxygen of the two living things, which is here concerned. It is the force that arranges the molecules and atoms.

"Weismann is forced to admit that his determinants which guide the course of evolution must be endowed with some vital property aside from the physiochemical forces with which we are familiar. So plain is this metaphysical element that Poulton, one of Weismann's followers, gives it an ancient theological twist by his interpretation that "no characters except those predetermined in the germ are available for evolution.

"Dividing things into vague infinitesimals and then calling them biophors or determinants is a more complex but not a more satisfactory solution than frankly vitalistic theories, when we are compelled in the end to affix the mystery to the infinitesimals."

Wright recognizes a metaphysical basis back of all things. Without the invention of a teleologic vitalism he does not see why the eye of the crab should resemble that of the ox. He thinks that the teleologic explanation is fatal to the curiosity which prompts investigation. The advance of science is continually showing a dependence of vital on physical phenomena or a close analogy between them.

The theory of Darwinism or neodarwinism does not give a satisfactory answer to the questions of heredity as shown by histology. Wright is inclined to emphasize the analogies between animate and inanimate nature as shown in the state of crystallization. This involves the assumption that no hard and fast line between inanimate matter and life exists.

"It has been insisted that a bar of iron once struck by the sledge of the blacksmith never returns to its pristine molecular condition. That blow forms part of the heredity of that bit of iron as long as it lasts. The reactions of a metallic colloid are also said to depend on its past experience. Wright cannot but believe that finally it will be shown that the colloid of the germ cell obeys the same law. Jennings declares that, for the somatic cells at least, the

physiologic states into which they are thrown by vital processes determine the character of their reaction to stimuli. The colloid state of the living cell thus shows its affinity with the colloid state of the metals."

Yet even after identifying vital processes with inorganic processes, even admitting they are all identical, which is far from having been proved, the heredity of living matter has been in no way explained.

E. L. Murdy¹ summarizes the laws of heredity in the following ten propositions:

1. The child tends to inherit every attribute of both parents.
2. Contradictory attributes cannot be inherited from both parents.
3. The child may inherit the attributes of either parent solely.
4. It may inherit the qualities of one parent in some respects and of the other in other respects.
5. It may inherit the father's attributes for one period of existence and the mother's for another.
6. Some attributes have the quality of prepotency, or the tendency to push aside or overrule other attributes.
7. Attributes which are similar in both parents tend to become prepotent, giving rise to convergent or cumulative heredity.
8. Attributes may be transmitted in latent form from one generation to another, to reappear in the third or fourth, or still more remote generation—a phenomenon termed "reversion."
9. Attributes tend to appear in the progeny about the same time of life at which they become manifest in the parents.
10. Attributes of the father tend to be inherited by the sons and of the mother by the daughters.

Acquired variation may occur according to the natural tendency which may be exaggerated and act in a cumulative manner from either natural or artificial selection and may tend to improvement or deterioration. The acquirement of hereditary immunity against disease is seen in the fact that races which have had long experience with

(1) Jour. Minn. State Med. Assoc., May 1, 1909.

particular diseases acquire such immunity that what is fatal to inexperienced races produces but slight effect on them. This is shown by the great susceptibility of the American Indians to tuberculosis, by the severity of measles in savage communities, by the comparative immunity of the negro to malaria.

The author gives the following facts relative to hereditary diseases:

"In insanity, 20 to 40% of the cases are hereditary or from parents who possess some neuropsychic equivalent. By the working of the laws of heredity reversion to type may explain a certain number of cases, and, again, that other law by which both parents possessing common neuropsychic attributes will transmit their common attributes in an exaggerated form, or in a prepotent form, resulting therefore in more perversion or more insanity for their progeny. Children tend to inherit the attributes of both parents; therefore, if there is insanity on both sides, or on either side, or an unstable nervous system, or if the parents possess the neuropsychic equivalents, insanity or its equivalent in their children will be the logical issue of the union.

"In epilepsy many of the same conditions prevail, and the same laws are operative. Outside of traumatic epilepsy 10 to 40% of all epileptics are the direct heritage of epilepsy or some neuropsychic equivalent.

"In idiocy 50% of the cases are the direct heritage of mentally defective parents, and the same laws are operative which apply to all neuropathic diseases."

Among the hereditary neuropsychoses may be included alcoholism and drug habits. About 10 to 30% of tuberculosis is evolved from the class with hereditary tendencies. The author contends that by prolonging the lives of defectives we are tending to deteriorate the human stock. He advises limitation of marriage and production.

W. E. Castle¹ gives the following exposition of the laws of heredity:

"By heredity we mean the fact that an individual resembles its ancestors. Such resemblance has its basis in the material out of which the individual is formed. But

(1) Ill. Med. Jour., April, 1909.

every new individual has its beginning in the union of two reproductive cells—an egg cell furnished by the mother and a sperm cell furnished by the father. Of the two, the egg is enormously larger, but its influence on the nature of the offspring is no greater. In heredity-transmission the two parents share equally. This fact indicates that a large part of the egg consists of substance nonessential to heredity. Indeed, we have reason to believe that there is no relation whatever between the mass of the reproductive cell and its influence in heredity. Heredity perhaps consists chiefly, if not exclusively, in the transmission of enzyme-like materials which initiate certain metabolic processes in a suitable medium represented by the food materials of the egg. On this view the mass of the hereditary substance is of no consequence whatever, since it contributes nothing to the end-product, but only sets going certain chemical processes. The nature of the end-product will depend upon what processes are set going and in what order.

“Regarding the reproductive cell as an assemblage of initiators or ‘determiners’ of metabolic processes, we are led by several distinct lines of evidence to consider each such reproductive cell, whether egg or sperm, as containing in general a complete set of all the determiners necessary to form an individual of the species. If so, the ordinary individual contains two such sets, since he has been produced by the union of two different reproductive cells. From the standpoint of heredity, therefore, if we regard the reproductive cell as single, the individual is double. This conception of the individual as a duality receives the fullest confirmation from breeding experiments with animals and plants alike.

“If two animals of different colors, black and white, are mated the offspring are black because the black character obscures the white, but in the second generation the black characters disappear in one-fourth of the offspring, which are the result of the junction of white reproductive cells only. This is an illustration of Mendel’s law.

“This law of ‘exclusive’ or ‘alternative’ inheritance, in which the excluded character skips a generation, reappearing in the second generation, when suitable matings are made, applies to color inheritance quite generally. Thus in crosses, black and yellow as a rule exclude the less dense

pigments, brown and yellow. In man the brunette type excludes the blonde, and brown eyes exclude blue ones.

"But the workings of this law are not restricted to color characters. Hair-length and texture are likewise Mendelian characters in heredity. Long or 'Angora' hair in guinea-pigs and rabbits is a character excluded by short or normal hair. In man curly hair is dominant over straight hair. In guinea-pigs an abnormal arrangement of the hair in rosettes is dominant over normal coat, just as in birds abnormal arrangement of the feathers in crests, ruffs and frizzles is dominant over normal arrangement.

"Further, the Mendelian characters are not restricted to superficial or skin characters. In man a two-jointed condition of the fingers has been found to be dominant over the normal or three-jointed condition, the abnormality in this case being associated with shortening of certain other parts of the skeleton. This case is the more remarkable because skeletal characters in general seem to be non-Mendelian in heredity. Color blindness, left-handedness and other peculiarities due to abnormal structure of the nervous system follow the law of Mendelian inheritance, as do also numerous pathologic conditions, such as hemophilia, known to 'skip a generation' or appear sporadically in families."

Sex appears to be a Mendelian character and other Mendelian characters are sometimes associated with it in inheritance, appearing in one sex but not in the other. The equality of the sexes in the higher animals is therefore fixed by a mathematical necessity.

"But not all heritable characters conform with the law of Mendelian or alternative inheritance; another important class of cases is governed by what we may call the law of blending inheritance. This is well illustrated in a cross between races of rabbits which differ in ear length. The offspring in such cases, when full grown, have ears which approximate closely the mean of the ear lengths of the respective parents.

"The linear dimensions of the skeletal parts of rabbits follow the same law of blending inheritance. In consequence the offspring have both skeletal dimensions and skeletal proportions which approximate closely the mean of the corresponding parts in their respective parents.

"Between fully alternative and fully blending inheritance we can recognize intermediate types, in which there is neither complete blending nor complete segregation of the contrasted characters brought together in a cross. Such, for example, is the case with polydactylism in the guinea-pig. A cross between an established polydactylous race (four-toed) and a normal one (three-toed) produces young sometimes with fairly well-developed extra toe, sometimes with very imperfect extra toe, and sometimes with no extra toe at all. The next generation shows a similar diversity of conditions. Extra toes are produced of all grades of development except the highest, both by individuals having extra toes and by those which lack the extra toe. In such cases it is evident that modification of the contrasted characters has taken place as a result of crossing, but this modification is less extensive than in blending inheritance.

"It is plain that in such cases heredity units are concerned, but their behavior is not strictly Mendelian, i. e., accompanied by dominance and segregation. It seems probable that in blending inheritance also heredity units are involved, but their behavior is different, and the breeder will do well to treat them in a different way.

"To sum up our conclusions, in all forms of inheritance alike, each parent makes, as regards every separately heritable character, a unit contribution to the offspring. Consequently the offspring are as regards every character twofold, or dual, organisms. When the offspring, in turn reproduce, they transmit the conditions which they received from their parents; they transmit those conditions separately in alternative inheritance, blended in blending inheritance, and partially separate, partially blended in other forms of inheritance."

If the characters which it is desired to combine in one race conform with Mendel's law in heredity, the entire process of producing and fixing the new combination may be completed within two generations, but not all the individuals of the second generation will breed true to the combination of characters they manifest. Here is where selection must come in to single out the individuals which will breed true.

E. Davenport¹ draws the following conclusions from the table of Galton, giving the relation of the height of parents to those of children in 205 cases:

1. Parents of all sorts, whether tall or short, good or bad, produce some offspring better than themselves (as taller), some that are worse (as shorter), but a larger number not far from the standing of the parent.

2. If the parent is above the average of his race, his offspring will average high, but many individuals will be near the lower limits of the race.

3. The exceptional individual may arise either from the exceptional parent or from the mediocre parent.

4. More exceptional individuals arise from mediocre parents than from exceptional parents, but it is because the number of mediocre families is high (41) as compared with the exceptional (6).

5. The proportion of exceptional individuals is vastly higher from exceptional parents than from mediocre parents.

6. Whatever the parentage, there will always be a portion of the race that is decidedly inferior in respect to any given character.

The offspring of superior people will be likely, but not necessarily, superior people, and the offspring of degenerates will mostly be inferior, and the offspring of mediocre people will, on the whole, be mediocre, with some exceptionals and a few degenerates. The selection of the few exceptionals is common in animal breeding, but is not necessary in human eugenics, because the principle of preferential mating accomplishes the same purpose. Men and women do not, as is popularly supposed, choose opposites. To go beyond this natural result of preferential mating, we should be obliged to interfere with the deepest human instincts. This is not necessary for two reasons: first, the effect of preferential mating and secondly because exceptional individuals arise in large numbers from mediocre parents. It is therefore only necessary to exclude the degenerates and the race will naturally improve. The judicial process in dealing with criminals should aim to determine whether the criminal is such by nature, in

(1) Ill. Med. Jour., April, 1909.

which case he should be permanently segregated from society and rendered incapable of producing offspring, but if he is merely an accidental criminal opportunity should be given him to reform.

Davenport would not tamper with the marriage relations of normal people, but would eliminate the degenerates as soon as possible.

Heredity of Disease. A. L. Smith¹ believes that the theory that consumption, cancer, insanity and drunkenness are hereditary has done great harm. So long as it was believed that consumption was hereditary effective treatment was not likely to be undertaken and prevention was hardly thought of; when it began to be believed that it was contagious, advance on the prevention was made and the death rate decreased. Cancer is on the increase according to Smith, because its contagious character is not recognized. Its hereditary character can not be sustained by investigation. Smith has endeavored to obtain information on this point by a collective inquiry and finds that most of those who responded to his questions had not observed the direct inheritance of the disease.

To sum up: The bubble of the heredity of consumption has been burst and requires no further argument. Cancer, which has been considered a hereditary disease, is largely on the increase, just as consumption is on the decrease. One of my correspondents, the medical health officer of the model town of Bernardstown, Mass., in which every death has been recorded, with its cause, since 1864, writes me as follows: "From 1864 to 1874, one death from cancer, and forty from tuberculosis. From 1874 to 1884, three deaths from cancer, and twenty-six from tuberculosis. From 1884 to 1894, eight deaths from cancer, and seventeen from tuberculosis. From 1894 to 1904, twenty deaths from cancer, and seven from tuberculosis." These data result because cancer is still believed to be hereditary and no precautions are taken toward stamping it out, while consumption is recognized as contagious and is being rapidly stamped out. So that it is of the utmost importance that the popular idea of its heredity should be

(1) N. Y. Med. Jour., Sept. 19, 1908.

changed; for until it is, no steps will be taken to isolate it and people will put off having it removed while it is still possible to remove it entirely.

The contagiousness of insanity is suggested. A man may die insane from some acquired cause and his son or daughter from another unrelated cause and yet the insanity of the son will be classed as hereditary. The author is convinced that a child born of the most clever and most intellectual parents may become insane, if improperly fed or badly brought up, while a child of weak-minded or even insane parents may grow up to be an intellectual giant if transplanted soon after birth to a highly intellectual environment and if properly fed. Idiots and those having organic disease of the brain are not referred to.

Dr. Vallee, superintendent of the Beauport Asylum, Quebec, believes that many cases of insanity are contagious, in the sense that one member of the family may by imitation of the insane actions of another member gradually become as insane as the first one.

Drunkenness is generally supposed to be hereditary. But the writer is convinced that what has been taken for heredity is simply a matter of imitation. He knows of several families where the father was a confirmed drunkard long before the children were born, and yet not one of those children care for alcohol; in fact, they loathe it. These children were for the most part educated away from home. In another family, where the father took to drink after all the children were born, the five boys were brought up with the constant example of a drinking father before them, and four out of the five have become drunkards. If drunkenness is recognized as contagious instead of hereditary many a family might be saved from this disease, either by isolating the drunken father or by sending the children away when practicable.

If more attention were paid to training and environment and less to heredity, there would be fewer consumptives, fewer people with cancer, fewer insane, fewer drunkards and fewer murderers.

AUTOPROTECTIVE MECHANISM OF THE ANIMAL BODY.

C. E. de M. Sajous¹ elaborates a theory of the protective influence of the glands having internal secretions which starts with the secretion of the adrenals, which secretion has a marked affinity for oxygen, and inevitably reaches the pulmonary air cells. On reaching the air cells, the adrenal secretion absorbs oxygen and becomes a constituent of hemoglobin and of the red corpuscles. It is the adrenal secretion which, after absorbing oxygen from the pulmonary air and being taken up by the red corpuscles, supplies the whole organism, including the blood, with oxygen. The red corpuscles, after absorbing the oxygenized adrenal secretion (the albuminous constituent of their hemoglobin) yield it to the blood plasma in the form of droplets, the so-called "blood platelets." The oxygen laden adrenal secretion is a constituent of the albuminous hemoglobin in the blood plasma. From this evidence he concludes that the adrenal secretion governs the metabolism of the body.

Sajous calls the oxygen-laden adrenal secretion adrenoxi-dase. This he concludes has intimate relations with the process of immunity. This is shown by its relation to the genesis of fever, in which it appears to be the agent that raises the temperature. The next step in the argument is to show the method by which the adrenals and their secretion are regulated through the nervous system.

The governing center of the adrenals is neither located in the cerebrum nor in the medulla oblongata, but in some organ at the base of the brain. Study of the pituitary body showed that it has close relations with this nervous control. The pituitary body sends nerve fibers upward to the *tuber cinereum* and the walls of the third ventricle and thence to the pontobulbar region and the spinal cord. It has been shown that lesions along this path provoke a rise of temperature. The pituitary, like the adrenals, influences general oxidation and temperature as well as metabolism and nutrition and like the adrenals it influ-

(1) N. Y. Med. Jour., Feb. 20 and 27, 1909,

ences blood-pressure. The pituitary also, like the adrenals, may cause glycosuria.

"Having ascertained 1, that the pituitary could alone be the source of impulses to the adrenals; 2, that this organ projected fibers toward the bulb; and 3, that the pituitary and the adrenals give rise to similar experimental and clinical phenomena, it became a question whether a nerve path actually united these organs. Study of this question showed that the phenomena provoked by both the pituitary and the adrenals can be traced by irritation or sections along a continuous path leading from the pituitary to the adrenals.

"Briefly, these facts jointly suggest that the pituitary adrenal path leaves the spinal cord through the upper four or five rami to enter the sympathetic chain and then the great splanchnic which, through the intermediary of the semilunar ganglia, supplies nerves to the adrenals."

From these considerations the author concludes 1, that the pituitary is connected with the adrenals by direct nerve paths; 2, that it thus governs, through the adrenals, general oxidation, metabolism, and nutrition.

He next proceeds to trace the analogies between the thyroid gland and the adrenals. The thyroid secretion is an iodized globulin, the globulin being the albuminous constituent of hemoglobin, i. e., adrenoxidase. The thyro-parathyroid secretion eventually reaches the superior vena cava and is carried to the pulmonary alveoli where it is taken up by the red corpuscles along with the adrenal secretion. The thyro-parathyroid secretion endows the albuminous portion of the hemoglobin with sensitizing properties. As such it is the blood constituent which A. E. Wright has termed opsonin. The thyroid secretion acting as opsonin also softens bacteria and other pathogenic agents to facilitate their proteolysis by the complement. As such it is known as agglutinin. Numerous chemical and clinical facts show clearly that the thyroid constituent of the hemoglobin enhances oxidation of the tissues.

Further analysis of this phenomenon then elucidated the nature of the process itself—that embodied in the following deductions:

- 1, The thyro-parathyroid constituent of the hemoglobin

enhances oxidation by increasing, as a ferment, the inflammability of the phosphorus which all cells, particularly their nuclei, contain.

2, As such it combines with adrenoxidase to sustain metabolism and nutrition.

3, All pathogenic elements in which phosphorus is present: bacteria, their toxins or endotoxins, toxic wastes, etc., are similarly influenced by the thyroid product acting as opsonin or agglutinin; they are thus rendered more vulnerable to the digestive action of the plasmatic and phagocytic complement.

From the similarity in their functions Sajous concludes that a relation exists between the pituitary body and the thyroids and from evidence drawn from zoology he concludes that the pituitary body is a governing body to the thyroid mechanism. He finds that the pituitary body of all animals from mollusks to man contains a sensory organ which structurally resembles the nasal olfactory membrane. In ancestral animals the "test organ" serves to test the purity of the sea water ingested by them. In consideration of the anatomic relations the conclusion seems warranted that in the higher animals, including man, the "test organ" tests the purity of the qualitative homologue of sea water, the blood, for toxic substances and, where possible, causes destruction of these substances. Sajous expresses the view that fever is the physiologic expression of the defensive mechanism when a toxin capable of exciting the test organ is present in the blood. The experiments of Sawadowski showed that when a section was made through the optic thalami the injection of putrid substances into the blood failed to produce fever. This is explained by supposing that this section divided the nervous path by which the impulses were conveyed from the "test organ" to the adrenals and thyroids.

These experiments speak for themselves—especially in view of the fact that Sawadowski mentions among the concomitant effects of his sections "disorders of respiration and circulation," and also blueness of the blood—obvious evidences of defective oxygenation. Added to the foregoing evidence, they seem to Sajous to warrant the following general deductions;

1, Man, in keeping with many animals lower in the phylogenetic scale, is supplied with an autoprotective mechanism.

2. This mechanism includes: 1, the immunizing center, an organ of special sense annexed to the heat center, both centers being located in the pituitary body; 2, the thyroparathyroid glands; 3, the adrenals; and 4, special nerves which connect the immunizing center (through the heat center) with these two sets of organs.

3. The immunizing center which governs the autoprotective mechanism, is the developed "osphradium" or "test organ" described by zoologists in mollusks and certain ancestral vertebrates.

4. While the osphradium of primitive animals tests their respiratory fluid, sea water, its prototype, the immunizing center of higher animals, including man, tests the blood, also a respiratory fluid and a qualitative homologue of sea water.

5. When the functional activity of the immunizing center is increased through the presence in the blood of some toxin (i.e., wastes, toxins or endotoxins, mineral and vegetable poisons, certain venoms, drugs, etc.), capable of exciting this center, it stimulates correspondingly the heat center and thus awakens the immunizing process.

6. Fever indicates that the autoprotective mechanism is active. The rise of temperature is due to the increased production of thyroparathyroid and adrenal secretions and the resultant increment of metabolic activity. The immunizing process is a consequence of this hypermetabolism, all the immunizing agents, plasmatic and cellular, being produced in greater quantities.

7. Absence of fever in a toxemia of any kind is due to inability of the immunizing center to react under the influence of the toxin, owing to deficient sensitiveness (inherited or acquired) of this center, or to the fact that the toxin is itself a paralyzant or anesthetic of its sensory elements.

8. Excess of fever (above 105.5° F.) is due to excessive excitation of the immunizing center and a corresponding overproduction of defensive bodies. This condition exposes the red corpuscles and the endothelial cells to

proteolytic destruction (hemolysis and autolysis) along with the pathogenic substances or bacteria.

As a summary of a simplified conception of immunity Sajous refers briefly to the following factors:

"1. Certain leucocytes (the finely granular oxyphiles) secrete in the blood their nucleoproteid granulations, the phosphorus of which, when oxidized, liberates heat. 2. The final bacteriolytic or antitoxic agent (complement or phagocytic cytase) is, in keeping with prevailing teachings, a trypsinlike ferment whose activity is increased by heat. These features completing the needs of the defensive process, we may proceed to summarize it.

"There occurs, at first, what might be termed the 'preparatory' stage, the purpose of which is to increase the defensive constituents of the blood and other body fluids. This is brought about as follows: The toxin (certain toxins, wastes, drugs, etc.) excites the immunizing center. This center in turn stimulates the thyroparathyroid glands and adrenals, thus causing them to supply the blood (and to a certain extent the lymph and serous fluids) with an excess of *thyroidase* and *adrenoxidase*. Metabolism being enhanced in all tissues by these substances, the pancreas also secretes an excess of *trypsinic ferment*, while the leucocytogenic tissues (bone marrow, lymph glands, etc.) produce an increased number of leucocytes, mainly *finely granular oxyphiles and phagocytes*. The blood and other body fluids being now provided with all the active agents of the defensive mechanism the process itself is started. It is briefly, as follows:

"The thyroidase (opsonin, agglutinin) sensitizes and softens the pathogenic agent while the adrenoxidase (amboceptor) oxidizes the phosphorus of the nucleoproteid granulations, liberating heat; the activity of the trypsinic ferments (plasmatic and phagocytic complement) being correspondingly increased, the pathogenic agent is converted into benign and eliminable products."

PARASITISM AND NATURAL SELECTION.

R. G. Eccles¹ discusses the part played by animal and vegetable parasites in the evolution of the animal kingdom. Parasitism is due to a struggle for existence among the lowest classes of animals and evidences of it are found in the fossil remains of the geologic ages. Without doubt the diseases produced by such parasitism have destroyed large numbers of animals, and the survival of the species which are now on the earth must be to a large extent due to their adaptation to the presence of parasites either by the development of protective structures or of powers of neutralizing their poisonous secretions. The development of the successful survivors of the attacks of these parasites has made their tissues no longer habitable by them so that many parasitic forms have perished. Others have adapted themselves to their hosts and still survive as the exciting causes of present day diseases. The course of evolution has been accompanied by the development of specific characters among the parasites as well as among their hosts. Eccles illustrates these facts by a table showing the relations of the protozoa in the form of a tree. He concludes that disease has had its function in securing the higher development of animal species and of man in particular. He says: "It thus seems probable that what we have hitherto deemed altogether a thing accursed—disease—may yet be proved to be a blessing in disguise. It can truly be said of all our race that 'These are they that came up through great tribulation' but without such tribulation there could have been no such perfection of beauty and of form as we find on the earth at present."

PHYSICAL DEGENERATION.

W. Coates² points to a steadily increasing physical and mental deterioration in the British nation as is shown by the stature and weight of recruits for the army. The conditions in the navy are shown by the fact that while on an average 5,000 boys are needed annually, 33,000 are

(1) Med. Record, July 31, 1909.

(2) British Medical Jour., May 1, 1909,

rejected in order to get them. The following figures are given for the army: The minimum requirement in height has been reduced in the last 50 years from 64 to 63 inches. Previous to 1883 a recruit could not enter the army unless his minimum chest measure was 34 inches; he can now enlist into some units with a chest measure of $31\frac{1}{2}$ in. provided he has 2 in. expansion.

In 1862, 416 recruits per 1,000 weighed under 130 pounds.

In 1907, 657 recruits per 1,000 weighed under 130 pounds.

In 1862, 52 recruits per 1,000 weighed under 110 pounds.

In 1907, 83 recruits per 1,000 weighed under 110 pounds.

Fifty years ago, when the physical requirements for enlistment were much more stringent than now, 37% only of the recruits examined were unfit for service. In 1907, 39% were rejected by the medical officer; and General Sir Frederick Maurice considers that, when the numbers that are sent away by the recruiting sergeants and those dismissed as unfit after 3 months' service are taken into account, at least 60% are now lost to the army through physical unfitness.

The author thinks that by judicious efforts on the part of the medical profession much can be done to lessen this progressive degeneracy. He proposes an increase in judicious physical exercise, the institution of playing fields, the better physical training of children in school and on play grounds and the institution of universal military drill.

One of the most encouraging facts with regard to the possibility of restoring the health and strength of a nation is to be seen in what has happened in Sweden. Seventy or eighty years ago the Swedes were fast becoming a degenerated race, but they appreciated their condition before it was too late. They reformed their licensing system, planned their towns so as to secure much vegetation and ample open spaces, and gave the youth of the country a sound gymnastic training on the system which is now recognized to be the best. They are now the finest race in Europe, and, what is most remarkable, the men of the

towns, owing to the excellence of the details that have been observed in their planning, are, as a rule, as robust and as strong as those of the country.

The diminishing rate of both marriages and births seems to be a matter of much concern. "The serious decrease of the birth-rate in this country [England] is intimately connected with physical degeneracy on the one hand and with the responsibility of our profession in its prevention on the other. There is a decrease in both birth-rate and marriages in all the countries of the world except Ireland, some parts of Spain, of Austria and Russia. The exceptions are due to the stronger religious beliefs held in these places regarding marriage and its objects. The birth-rate per 1,000 of population in Manchester was in 1907 only 28.3; in 1871-75 it was 38.9; in 1881 35.9; in 1891 33.8 per 1,000. Manchester is by no means worse than other towns. In Nottingham during the last 25 years there has been a fall in the birth-rate of 30 per cent."

SMOKING.

J. D. Mann¹ discusses the effects of excessive smoking. He shows that the results of smoking are essentially those of nicotin poisoning and the absorption of nicotin can take place both from the smoke and from the contact of the tobacco with the mucous membrane of the mouth as well as by the absorption of tobacco through the skin when the moistened cigar or cigarette is held in the fingers.

The effects of tobacco are divided into stages, although no distinct dividing line can be drawn, the poisoning being a progressive one. *The symptoms of the non-organic stage* are thus described:

"The first group—in which there are no indications of organic disease—comprises those cases which are most frequently met with; but, as the symptoms are often irregular in their appearance, the true cause of the ailment may easily be overlooked. The patient usually attributes his symptoms to indigestion, which he says gives rise to flatulence, and causes palpitation of the heart. He generally lays great stress on the latter symptom, and this

(1) British Medical Jour., Dec. 5, 1908.

ought to arouse suspicion. He complains that this palpitation wakens him in the middle of the night, when he finds that his heart is beating violently, and that he feels restless and uncomfortable, and that he cannot go to sleep again until the heart has quieted down. Or perhaps he says that the palpitation prevents him going to sleep when he first lies down in bed. A 'sinking sensation' in the cardiac region is often complained of, which is probably due to gastric catarrh. He may feel a sense of irritation of the pharynx which causes him to cough or to clear his throat frequently. It is only in the more advanced cases that the patient spontaneously refers to his vision as being less acute than formerly, and that objects appear as though seen through a misty atmosphere. On being questioned, however, some such complaints may be evoked; he may add that he can see better in the partially obscured evening light than in the full glare of noon. Defect of near-sight is sometimes observed. Blunted color perception when the light is feeble is not infrequently an early symptom."

On physical examination we find the tongue often coated; the fauces hyperemic and the stomach probably dilated and filled with gas. If the arms are held out horizontally in front, the fingers or the hands frequently show some indications of tremor. The heart is usually dilated, possibly only slightly so. The pulse-rate is accelerated and the cardiac impulse is greatly exaggerated. At this stage, other physical cardiac signs will probably be absent. The action of nicotin on the heart was experimentally investigated by Esser, who found that, after repeated injections of small doses of nicotin into dogs, the cardiac muscle remained intact; and that the derangement of the heart's action was due to pronounced degeneration of the vagus. Kose attributes the quickening of the pulse to paralysis of the vagus and excitation of the sympathetic, the accelerating fibers of which subsequently become paralyzed, and then the pulse-rate becomes slower.

"The most convincing diagnostic indication of chronic nicotin poisoning is afforded by the alterations in vision. The field is sometimes concentrically contracted; but of much greater importance is the presence of a scotoma for red and green, either partial or complete; the latter is

only met with after prolonged excessive smoking. The scotoma lies horizontally between the macula and the blind spot, and is more toward the temporal than the nasal half of the field. Green vision is the first to be affected, and is the last to return. The ophthalmoscope does not afford much information, although Bär states that reddening and tumefaction of the papilla is typical of the early stage of tobacco amblyopia. Tachycardia frequently occurs in nicotin poisoning without the eye symptoms; in some instance amblyopia is met with without tachycardia, or they may occur together. Tachycardia alone is the most common."

In regard to the organic changes produced by tobacco, both experiment and clinical observation show that it produces arteriosclerosis and the heart changes which accompany it. Tobacco sometimes produces a painless heart failure which in some instances is fatal.

The effects of tobacco vary somewhat with the constitution of the individual, but while some live to old age in spite of excessive use of this poison this fact can not be urged against the evil effects produced in less fortunate cases.

"It is obvious that with all physiologically active substances the question of degree is largely determinative of the results produced by any agency that is capable of affecting the health. Most men, if they choose to smoke, can do so within certain limits without injuring their health; some men can exceed such limits with apparent impunity. The extent of the limitation must be determined by each man for himself, and if he is wise he will keep well within the border-line and will hold to his resolution. Here lies the difficulty; the growth of a habit overrides discretion. The habit of excessive smoking is more insidious in its development than that of excessive drinking, for the results are much less obvious. An alcoholic may be appealed to by his friends or admonished by those in authority; this rarely happens to the adult smoker, unless he consults his doctor about 'indigestion and palpitation' and admits that he smokes to excess; then probably the necessary warning will be given."

ALCOHOLISM.

Classification. W. House¹ divides cases not into acute and chronic as is frequently done, but classifies them according to the type as follows:

1. Those who drink to excess daily or continuously—habitual drunkards.

2. Those who imbibe immoderately at intervals, to celebrate joy or drown sorrow, or under the guise of having a good time—periodic drunkards.

3. Those who, governed by irresistible impulse, mastered by overpowering drink-lust, absorb alcohol at more or less regular intervals, go through a distinctive disease process, satisfy a constitutional craving, and voluntarily or with assistance cease entirely the use of alcoholics until the next storm seizes them. These are called dipsomaniacs.

Heredity plays little part in the production of the ordinary drunkard, but those of the first type exhibit an acquired habit having no pathologic basis, while the second show more the operation of constitutional causes although the beginning of a debauch is well under control of the will. In the second class, however, the spree once begun is likely to continue almost without the possibility of voluntary control. House notes that persons who are not unfavorably affected by a debauch are likely to become victims of the second class. He says: "When an individual after a night's debauch awakens with a desire for a stiff drink, and when such a drink taken before breakfast is tolerable or gives relief from qualms of stomach or of conscience, he is possessed of or has created a susceptibility that endangers his welfare, and he had better for all time give up the use of alcohol in any quantity whatever. Mental weakness, defective judgment, neurotic tendencies, indifference to consequences, desire to drown sorrow or celebrate joy, all enter into the creation of the second form of habit. The habit of treating fosters and strengthens it.

"In the third form of alcoholism habit ceases to be of importance. Dipsomania has passed the realm of cultivated tendency, has slipped beyond the ill-defined border and

(1) Therapeutic Gazette, January, 1909.

is well within the domain of disease. As in many other diseases, its victim must pass through the phases from beginning to end. Each seizure paves the way and prepares for following seizures. Dipsomania is insanity. Its victim usually has premonitory symptoms of an attack and may make ineffectual attempts to evade it. More often he does not attempt to combat the tendency, rather seeming to increase the desire by pleasurable anticipation during a brief delay which seems but to whet the appetite. In the interval between debauches he is fully aware of his past mishaps and is certain that he can resist temptation when it comes. But as the crisis approaches he conceals the danger from himself, craves a single drink, takes it, and for the time being is lost.

"In dipsomania inheritance is of more importance than in either of the preceding forms. The parent or grandparent may have been a habitual or periodic drunkard, and as during the earlier hours of inebriety sexuality often becomes rampant, it is a question how many of these victims have reaped the curse of parental indiscretion through having been conceived during the height of intoxication.

"The climax of alcoholism is reached when the victim passes into that form of mental and motor agitation called delirium tremens. Its manifestations are familiar to all, and it is only mentioned here to state that in the habitual drunkard it often develops only after drink has been withdrawn, while in the other forms it appears at the height of the seizure. In this point is the chief reason for differentiating because of the influence on treatment. Rarely, withdrawal of drink from the dipsomaniac or periodic drinker also results in delirium."

Treatment. Prophylaxis. Proper teaching, good hygiene, good environment and the use of eliminants and tonics (which must not contain a trace of alcohol) are the chief requisites.

In dipsomania much can be done to prevent the onset of desire by careful attention to hygienic rules. The bowels must be kept open, cautious exercise taken, regular hours insisted upon. When the storm threatens, a calomel purge, a hot bath, a night's rest in the care of a trained

attendant occasionally help to such an extent that the battle is won. Each victory makes succeeding victories easier. Such as fail go into a debauch which lasts from 5 to 20 days (averaging 10 to 14), until, weak and trembling, with bowels constipated, kidneys disturbed, suffering from disturbed sleep and loss of appetite, the victim either breaks away or gets into such condition that the services of a physician are needed.

For the second indication, *cure of the habit*, much can be done by regulating the habitué's life either at home or, better, in a properly conducted institution where he can be watched. Every possible infirmity must receive attention and correction. Massage and electricity used judiciously serve to maintain a good standard of physical well-being, and are useful also for their psychic effects. Semidaily injections of gold and sodium chlorid can be recommended. Herein nothing is claimed of a specific nature, except that these injections satisfy the constitutional craving for tonic effects without the undue exhilaration which strychnin seems to produce. Proper encouragement, and the tiding of patients over one or two crises, will result in the cure of perhaps 75% of all patients who try this treatment faithfully, provided that at the beginning they are in reasonably good physical condition and free from organic lesions.

When at the height of a debauch medical attention is sought, the first indication is thoroughly to empty the intestines and the stomach. This is best done by the use of a large, high enema and the prompt administration of calomel, followed in 5 hours by a vigorous saline. Should the patient resist and threaten fight, especially if he is robust and powerful, 1/100 grain of hyoscin hydrobromate may be given in a glass of whisky, which he will only too readily take. Thirty minutes later this may be repeated if necessary. After the first or second dose most patients go to sleep, rarely requiring a third dose. During the drowsy stage they may be undressed and put in bed, and the enema given. A fight, with its consequences, more serious to the patient than to the attendants, may thus be avoided, and after a sleep lasting from 4 to 8 hours he will awaken tractable and easily handled. To get this

effect the hyoscin must be a reliable preparation, and this can be said of but few tablets on the market. A speedier effect can be obtained by its use hypodermically, if necessary.

To quiet the nervous and gastric symptoms, bromid and gentian are the most useful drugs, and may be given every 2 or 3 hours in the proportion of 15 gr. of the sodium bromid to a drachm of the compound tincture of gentian. Tincture of capsicum 10 to 15 minims in half a glass of hot milk every 2 or 3 hours is gratefully taken and relieves the desire for whisky. If the attack has followed the abandonment of whisky it may be necessary to combine whisky with hypodermic injections of strychnin.

House energetically protests against the use of chloral, which he regards as a dangerous drug. He is sure he has seen two or three cases in which chloral was the cause of death. The bromids, on the contrary, will, if given time, produce quiet without depression and may be supplemented by trional, sulphonal or veronal, especially the latter, with beneficial results.

According to L. W. Weber¹ the treatment of alcoholism has two objects: 1. The restoration of such degree of self control that the patient will become and will remain a total abstainer. 2. The treatment of the mental and physical results of the alcoholic poisoning. Fortunately both these objects can be attained even in very severe cases if the treatment is carried out in an appropriate institution. It is desirable that the family physician should be familiar with the principles of sanitarium treatment even if he is only occasionally required to apply them. The remedies usually recommended to assist in withdrawing the alcohol, such as atropin and strychnin, are not needed in these institutions. It is undesirable to give any narcotic in the course of removal of the alcohol, as such use favors the establishment of a habit in the unstable nervous condition of the alcoholic patient.

When a patient is received, as is frequently the case, in a condition of mild psychosis, such as delirium tremens, he should simply be watched but no drugs should be given unless necessary on account of the danger of heart failure.

(1) Deutsche med. Woch., Feb. 18, 1909.

Continuous warm baths and other sedative physical measures should be used with care on account of the danger of collapse. Plenty of liquid should be given in the form of some acidulated drink and to this some mild diuretic, such as sodium acetate, may be added.

Heart failure should be carefully guarded against. Besides avoiding narcotics, infusion of digitalis may be given and camphor resorted to if collapse is threatened.

In addition to the care of individuals Weber counsels the physician as philanthropist to maintain an active crusade to prevent the disease by a supervision of labor, by the withdrawal of predisposed or former drinkers from the reach of the alcohol industry, by improvement of the economic conditions, of the dwellings of the poor and of the laboring class, by restricting the factory labor of women in favor of their proper domestic occupations, by the formation of schools of domestic economy and of places of recreation unconnected with the sale of liquor.

LONGEVITY.

J. L. Nascher¹ calls attention to the fact that all our efforts to attain longevity have usually been confined to the period of degeneration. We have hastened the period of development and passed over the period of maturity with indifference and then when degenerations have already occurred have endeavored to lengthen the period of old age. The effort to prolong life should begin in childhood and youth by securing sufficient rest and allowing development to proceed slowly and steadily. We do not know how far osseous development is influenced by exercise, but we know that muscular development can be increased and adipose deposits decreased thereby. Gymnastics and mild exercises like walking and skating will bring this about as well as the more vigorous sports. The amount of sleep should be determined by need and inclination and not by habit or occupation. A meat diet imparts vigor, energy, activity and irritability, but a vegetarian diet produces the best built individuals and conduces to longevity. Since mental rather than physical vigor is

(1) N. Y. Med. Jour., April 17, 1909.

necessary in the battle of life, meat should be used sparingly and cereals freely during the development period. In the period of maturity the individual should avoid excesses and adapt his sleep, diet and recreations to his work. Mental labor requires physical recreation and *vice versa*. It is during the period of maturity that the arterial degenerations begin which cause degeneration of other organs and general decline. To prolong the period of maturity we must avoid those causes favoring arterial degeneration.

Psychic influences are powerful factors in warding off the feeling of age and in producing in many cases genuine rejuvenescence.

Of drugs phosphorus is the only one which produces a lasting mental stimulation without a depressant reaction. Alcohol favors atheromatous deposits, and its action is evanescent; cannabis indica, morphin, and cocain in minute doses increase mental activity, but in senility the system becomes soon habituated to them.

In many cases the feeling of being old is either psychic or the result of illness. When due to the latter cause restoration of health carries with it restoration of mental and physical activity. Changed surroundings, a sea voyage, or a stay in the country hastens such restoration, the main factor in such recovery being the effect upon the mind.

There are many psychic causes for quick aging. The moment a man is a grandfather, though he be but forty years of age, he suddenly feels old. Many men when they are placed in a responsible position involving life, lose their former buoyancy and lightness. Impending death, a secret fear, a great loss, a sudden fright have all produced sudden and permanent aging of the individual. Enforced seriousness and dignity tend to hasten age, while association with the young is a harmless mental stimulus. The lessened assimilation of the aged is partly due to changes in the digestive organs by which the sense of hunger and thirst is obtunded and an insufficient amount of food is taken to supply the waste. Meals should be more frequent and of easily digestible food. The author objects to green vegetables and to the articles of slight nutritive value often given such as jellies, broths, etc. The best form of exercise is walking up a moderate incline with frequent rests.

This should never be carried to the extent of fatigue, and the strain on the legs should be relieved and distributed to the arms by the use of a cane. Rubber heels make walking easier. The Nauheim system of saline baths with moderate exercise and massage is beneficial.

The aged apparently do not require as much sleep as in the earlier periods of life, but they do require frequent periods of rest. Slight fatigue is quickly overcome by rest, but exhaustion in the aged is more serious and takes much longer for recovery than at any other period of life.

In giving drugs in old age we must always bear in mind the atheromatous condition of the arteries with the resultant degeneration of the organs, the impaired circulation, and the changed power of assimilation. As a general tonic phosphorus is the only one that can be given to the aged indefinitely without creating a habit of aggravating existing conditions. Digestive stimulants such as the simple bitters, cinchona, and nux vomica may be given, also digestive aids, antifermentives and agents to relieve constipation. For the last indication calomel is best.

BIOTRIPSIS.

G. L. Cheatle¹ thus characterizes a condition of skin developing in old age on the most exposed parts although not wholly dependent on the action of external wear and tear. Cheatle lays special stress on the neurotrophic influences in accounting for the pigmentation and he calls attention to the fact that cancer is likely to develop in the same region as the biotriptic changes and that pigmented cancer is a most malignant variety. He thinks that the facts of biotripsis go to support the theory that neurotrophic changes are involved in the genesis, direction and limitation of the spread of cancer.

The biotriptic changes are observed commonly upon the backs of the hands, the temples and the foreheads of old people, but some of the changes have been seen upon the lower lips, cheeks, forearms and occasionally elsewhere. The skin becomes shiny, smooth, thin, inelastic, pigmented and apparently scarred, although the last cannot be ex-

(1) British Medical Jour., June 12, 1909.

plained by solutions of continuity of which there is no history.

The skin which shows the changes to best advantage is that which covers the second metacarpal bone and its immediate neighborhood. The skin is shiny, smooth, inelastic. The subcutaneous veins are almost subepithelial, there is a great degree of pigmentation, and there are in the most pigmented parts long radiating scars, which are more marked by loss of pigment than by the existence of cutaneous thickening. The condition is symmetrical; it is most marked in the region of the second metacarpal bone, and gradually fades away from this part. There is no similar change elsewhere on the hands. The tactile, heat and cold and pain sensations are not brisk, but it cannot be said that they are otherwise abnormal.

The condition very much resembles the bronzing of skin which has been subjected to prolonged exposure to the x-rays. It is interesting here to remark that the two conditions are similar in another respect, namely, they are prone to be the seats of cancer.

NECESSITY OF AUTOPSIES.

The following plea is made by J. T. Fox¹ for the habitual performance of autopsies in general practice:

"The great majority of us must surely often feel that as members of the scientific profession of medicine we at present often do let slip, from one cause or another, valuable and perhaps unique opportunities of adding to the knowledge of important facts upon which our science and art is built up.

"Some may say: There is abundant pathologic material in our hospitals, and such as the general practitioner could furnish is not missed. In reply I would merely instance three diseases which he has the most frequent opportunity of observing, and of the morbid anatomy of which he could supply specimens very valuable to the pathologist.

"1. *Hemiplegia*.—If the injured brain in all these cases could be handed over to the skilled neurologist after death—whether occurring soon after the vascular breakdown,

(1) British Medical Jour., June 13, 1908.



PLATE VII.

BIOTRIPSIS (LIFE-WEAR).

Hands of a 72-year-old woman; skin shiny, smooth and inelastic; subcutaneous veins almost subepithelial; much pigmentation with radiating scars; condition symmetrical. (Illustrating Dr. Cheate's article; from *British Medical Journal*, June 12, 1906.)

as in most hospital cases that reach the *postmortem* room, or after months or years—together with notes of the symptoms, how much useful knowledge might be collected anent the localization of function, and the processes of repair in the brain! At the same time the examination of the vessels, hearts, kidneys, livers, etc., that served these brains might shed light on prophylaxis against these terrible accidents.

"2. *Cancer*.—Who knows but such specimens as the rank and file of us could contribute might materially hasten the solution of this problem?

"3. *Tuberculosis*.—Even the general public, so apathetic in most medical matters, are now roused to take part in the battle against this other great scourge. Might not light be thrown upon the relative success or failure of various systems of treatment if there were more general and accurate record of *quiescent*, *cured* and *latent* tuberculous lesions in various organs—for instance, where death takes place from other causes and, perhaps, no suspicion of tubercle was felt. I hope I have proved the desirability of progress in the direction spoken of; the practical point is "ways and means." What methods can be set on foot, for instance, by our Association, to forward this work? I venture to suggest:

(a) A recommendation might be adopted and sent down to all our rank and file commending the practice.

(b) A grant of money might be made to provide some payment for the making of autopsies, and reporting records of the same under certain conditions. This might be more effective than the mere expression of a pious opinion.

(c) An organization for the collation of records and promotion of the work might be set on foot, something like that for the collective investigation of disease, perhaps.

(d) Co-operation and division of labor should be secured as far as possible. The help of specialists—pathologists, histologists and bacteriologists, should be enlisted. In urban centers a number of practitioners and hospital men might arrange to divide the chief fields of pathology between them. Thus, A might be observing the lesions of the alimentary canal, B of the brain, C cancer, etc.

"Backed by such an organization, it should be possible

for individual practitioners to secure many very valuable specimens of morbid anatomy and many useful pathologic observations, and also to get them utilized by our scientific leaders instead of lying buried in their case records."

BODY WEIGHT.

According to the *Journal of the American Medical Association*,¹ "The importance of over or underweight in an otherwise healthy adult is perhaps not sufficiently recognized by the profession. While tables of the average weight to a given height give sufficient range for individuality, they also show distinctly when an individual is overweight and when he is underweight. Between the ages of 15 and 25 the physician should rarely be satisfied to allow a member of a family in which he is professionally interested to remain underweight without careful investigation into its cause. It has been repeatedly shown that from the age of 15 to the age of 30, the age of greatest tendency to the development of tuberculosis, is also the age at which there is the greatest danger from underweight. In other words, the insurance statistics show that an underweight individual between these ages has a shorter expectancy of life than those of normal average weight. If each physician would individualize every such patient that he sees in the families of his clientèle he may ascertain some hygienic, occupation, or actual organic reason for such underweight, and if the cause is treated or prevented at a time when serious conditions are not present, not only will the patient's life be prolonged, but tuberculosis may be prevented. If a patient of underweight has lived to the age of 35, there seems to be less danger from his underweight causing a predisposition to disease. The age is then soon reached, after 40, of the danger from overweight, and from the age of 35 upward the expectancy of life diminishes the greater the amount of obesity.

"The danger from overweight seems to be due to the progressively greater necessity for a sedentary life, or, if exercise is actually taken, to the increased strain on the heart when the body performs the necessary physical exer-

(1) Oct. 24, 1908.

tion of ordinary exercise. It is self-evident that a heart must work much harder to take a man up-stairs when he is from 25 to 50 pounds or more over the average weight than if he was normal weight. If even this simple exertion is repeated for several years, it may be well understood why his life expectancy is shortened. Also, when an obese patient is attacked with pneumonia or must undergo some abdominal operation, even if his heart is not actually fatty, he again has his expectancy of recovery from these conditions greatly diminished. It therefore again becomes the physician's duty to arrange a diet or life for the individual when he is beginning to put on this surplus weight rather than to wait until the patient is driven to the physician by actual disability from such weight. Hence, in the treatment of underweight and overweight the physician should exercise the highest aim of the profession, viz., prevention of future disability."

In 1897 Dr. George R. Shepherd compiled for the Association of Life Insurance Medical Directors a table of height and weight for each quinquennium from 15 to 69, which was adopted by the leading insurance companies as being the standard.

HEIGHT AND WEIGHT AT DIFFERENT AGES.

Based upon an Analysis of 74,162 Accepted Male Applicants for Life Insurance, as Reported to The Association of Life Insurance Medical Directors, 1897.

Ages	15-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
5 ft. 0 in.	120	125	128	131	133	134	134	134	131	
5 ft. 1 in.	122	126	129	131	134	136	136	136	134	
5 ft. 2 in.	124	128	131	133	136	138	138	138	137	
5 ft. 3 in.	127	131	134	136	139	141	141	141	140	140
5 ft. 4 in.	131	135	138	140	143	144	145	145	144	143
5 ft. 5 in.	134	138	141	143	146	147	149	149	148	147
5 ft. 6 in.	138	142	145	147	150	151	153	153	153	151
5 ft. 7 in.	142	147	150	152	155	156	158	158	158	156
5 ft. 8 in.	146	151	154	157	160	161	163	163	163	162
5 ft. 9 in.	150	155	159	162	165	166	167	168	168	168
5 ft. 10 in.	154	159	164	167	170	171	172	173	174	174
5 ft. 11 in.	159	164	169	173	175	177	177	178	180	180
6 ft. 0 in.	165	170	175	179	180	183	182	183	185	185
6 ft. 1 in.	170	177	181	185	186	189	188	189	189	189
6 ft. 2 in.	176	184	188	192	194	196	194	194	192	192
6 ft. 3 in.	181	190	195	200	203	204	201	198		

Dr. Brandreth Symonds, in the *Medical Record*, Sept. 5, 1908, presents an interesting discussion of the expectancy of life of underweight and overweight adults and of the mortality figures of underweight and overweight individuals who have been accepted for insurance.

**SHOWING THE PERCENTAGE OF DEATHS IN ALL CLASSES
AND SOME IN INDIVIDUAL DISEASES AMONG OVER-
WEIGHTS, UNDERWEIGHTS AND THE GEN-
ERAL EXPERIENCE OF THE MUTUAL
LIFE INSURANCE COMPANY.**

Causes of Death		Over- weights	Under- weights	General Experi- ence
Class I.	General Diseases—Acute.....	9.67	9.28	8.90
	Typhoid fever.....	4.00	3.06	3.94
	Malarial fever.....	1.27	1.21	1.24
	Influenza	1.47	2.04	1.00
Class II.	General Diseases—Chronic.....	13.07	24.59	19.56
	Tuberculosis	2.93	16.98	12.42
	Cancer	4.40	5.57	4.18
	Diabetes	3.40	0.65	1.25
Class III.	Diseases of the Nervous System..	19.08	12.16	17.44
	Cerebral Congestion and Hem- orrhage—Cerebral Soften- ing, Paralysis.....	14.14	8.47	12.32
	General Paralysis and other forms of mental alienation.	1.80	0.84	1.30
Class IV.	Diseases of the Circulatory Sys- tem	16.01	11.69	11.85
	Organic diseases of the heart.	12.94	8.54	10.76
Class V.	Diseases of the Respiratory Sys- tem	8.54	15.78	11.86
	Pneumonia	6.87	12.34	9.03
Class VI.	Diseases of the Digestive System.	10.61	8.54	10.19
	Cirrhosis of Liver.....	3.47	0.65	1.00
Class VII.	Diseases of the Genitourinary System	12.01	7.42	8.78
	Bright's Disease and Nephri- tis	11.07	5.30	6.66
Class IX.	Diseases of Skin and Cellular tissue	1.20	0.47	0.50
Class XI.	Old age.....	None	2.04	0.50
Class XII.	Violent causes.....	7.07	5.57	7.42
	Casualties	4.20	3.43	5.21
	Suicides	2.87	2.14	2.20
Class XIII.	Ill defined	2.60	2.50	3.98

Pneumonia is nearly twice as fatal among underweights as among overweights, although the prognosis in pneumonia is usually regarded as more serious in an overweight than in an underweight. Taking these two factors into account, it would almost appear that overweights have a certain immunity from the pneumococcus, while the underweights are more than usually susceptible.

Cirrhosis of the liver is three and a half times as prevalent among overweights as in our general experience. This undoubtedly points to alcoholism, for statisticians generally consider that hepatic cirrhosis is a very accurate index of the alcoholic habits of a class. Among the underweights it is below the normal, as are also the other diseases of

the digestive system, thus showing their moderation in food as well as drink.

Bright's disease, both acute and chronic, is nearly twice as prevalent among overweights as in our general experience. This excess can probably be ascribed to the habit of overeating and overdrinking, which produces both the overweight and the Bright's disease. Among underweights it is a little below the average.

The effect of overweight is influenced by two fundamental factors: 1, the percentage of overweight; 2, age of the individual. The mortality increases markedly as the weight rises above 20% in excess, and to a still greater degree when the weight passes 30% in excess. This holds true for all types and all ages above 30 years. Beyond this period the mortality of overweights rises rapidly with the age and with the weight. In women the standard must be made a little higher than that of men, but with this allowance the effect of overweight among women is found to be just as bad as among men. As to underweight the effect is slight when the weight is not more than 20% below standard. The association of dyspepsia with underweight is a serious matter with those below 25 years of age, and has long been recognized as serious with a tuberculous family history, especially in the younger individuals. In women an allowance has also to be made as in overweight. Discussing causes of death of those suffering from overweight and underweight, he states that overweights suffer more than underweights in the class of acute general diseases. Overweight seems to secure a marked degree of immunity from tuberculosis. Organic diseases of the heart show a decided excess among overweights and as great a deficiency among underweights. Diabetics are scarce among underweights, but numerous among overweights. No overweight, whether man or woman, died of old age or senility according to Symonds' experience. He is convinced that the same percentage of overweights is more serious than if it were underweights, but in those below 25 years a moderate degree of overweight is more favorable than an underweight. The conditions are reversed above 30 years of age.

THE PHYSICIAN AND THE PRESS.

J. W. Pettit¹ reasons that the medical profession has put a wrong interpretation on its own code of ethics in making it exclude all forms of advertising in the public press. He believes that the objectionable feature in the medical advertisement as it is usually seen is the tendency to exaggeration and misrepresentation which characterizes it. If such an advertisement contained the truth there could be no logical objection to it. It is the element of fraud, intentional or otherwise, which makes advertising by our profession so objectionable. Any advertisement devoid of exaggeration either expressed or implied should be regarded as legitimate.

The author pleads more particularly for publicity for good medical work which is mis-called advertising, but is in reality the legitimate reward for meritorious work. The physician who furthers his own interests by doing good professional work is entitled to the reward which such service brings. News is news whether it relates to the physician or not. There are many things connected with our professional work which the public has a right to know. Pettit says:

"Just how and to what extent the medical profession may use or be used by the secular press legitimately can not be formulated by rule. Good judgment and good taste must govern in this matter as in everything else. The traditions of the profession with regard to advertising should be preserved, but let us make the distinction between principle and method and not make ourselves the subject of criticism and ridicule by contending for the perpetuity of methods which are obsolete.

"I have observed that many medical men who advocate a narrow interpretation of the code are engaged in advertising by devious methods if we accept the doctrine that all publicity is advertising. The writing of useless books, the establishment of medical colleges for the primary purpose of securing professorships, reading papers of doubtful value before medical societies as an excuse for the wholesale distribution of reprints, are some of the methods

(1) Ill. Med. Jour., June, 1909.

employed to evade the spirit of our code of ethics. The mad attempt thus to deceive and be deceived is responsible in a large measure for the establishment of so-called medical colleges (many of which are simply diploma mills), an evil which is not only a disgrace, but an absolute menace to our profession. One of the best means of mitigating these evils is to permit and encourage legitimate publicity along more rational and less harmful lines."

Pettit holds that we should not refrain from making use of the press because others misuse it. If we expect people to use good judgment on medical topics we must teach them. If we do not show them the true character of the "patent medicine" fraud we can not wonder that they are misled by it. Because the newspaper inserts the quack or "patent medicine" advertisement we criticise and ostracize it. When the editor asks us for reliable medical information we refuse to give it, through what Pettit believes to be a misinterpretation of an ethical rule.

"Granting that the secular press is a legitimate field for the dissemination of medical knowledge, what may fairly be regarded as the range of its usefulness? At present this question can only be answered in the most general way. More definite knowledge must come with the successes and failures which will result from experience. The first step necessary is to relieve the truly ethical, educated physician from unfriendly criticism if he ventures to discuss through the medium of the press medical topics of general interest. Under present conditions the physicians who are most capable of enlightening the public, and whose opinions would have weight and influence, will not, as a rule, be heard until this embargo is raised. Relieved of this censorship, medical men will enlarge their field of usefulness by directing public opinion along proper lines, and not leave the laity to get their ideas of medical matters 'catch-as-catch-can.'

"How many laymen are there who have any conception of the nature and extent of the changes which have revolutionized surgery within the memory of men still active in the world and how many who understand the nature of the mental processes by which this revolution has been brought about, the exactness of research, the patience of

experimentation, the devotion to truth, the ceaseless labor, which has never before been witnessed in the history of the world, so far as that history is known to us? The medical profession will never occupy its right place in society nor be regarded in any more adequate light than as dispensers of pills and powders until the nature of its work is better understood by the public than it is at present.

"How shall the people know these things unless we teach them? How shall they discriminate between the true and the false, the physician and the quack, if they do not have the information which will enable them to make this distinction. We of the medical profession are in possession of truths which can help our fellow men. Shall we hide our light under a bushel or shall we follow the scriptural injunction to preach the gospel to all nations? The united action of the press and the medical profession in the present crusade against tuberculosis is a striking example of what can be done by a union of forces which have hitherto stood apart. By the aid of the press we have accomplished more in five years than could the medical profession unaided by the press in a quarter of a century. With such a plain indication of our duty before us shall we still blindly follow a misinterpreted and misapplied ethical rule which has always placed our profession in an illogical position and been a serious bar to our greatest usefulness? The prevention and not the cure of disease will be the principal work of the profession in the future. We can accomplish little or nothing without the aid of an intelligent public. This same public will not accept the *ipse dixit* of the physician any more than it will of the theologian, and we must give a reason for 'the faith that is in us,' and in a way the public demands. No argument based upon a false notion of ethics will excuse us for any shortcomings of duty, with what is ever a fair and reasonable public."

The value of the free lecture on medical topics is emphasized and the view expressed that the physician must conform himself to the conditions of the present age. If the press is used without advertising to discuss medical questions which are vital to the public the good that may be accomplished can hardly be overestimated.

VITALISM AND TELEOLOGY IN NATURAL SCIENCE.

Prof. Thöle¹ in an address to the Army Medical Society at Hanover attempts to clarify the relations of metaphysical conceptions to scientific research. He lays down as a fundamental principle that there are two ways of regarding the external world—the subjective and the objective. The subjective, starting from the inside and taking account of the feelings and motions of the mind, employs such conceptions as purpose, will, force and the like. The objective, viewing phenomena from the outside, takes no account of these psychic states, but regards simply the changes in matter. Matter and matter only is the field of natural science. These two ways of regarding nature must be kept distinctly separate. Physical science seeks to introduce unity into the phenomena presented by the outside world, and in this process of classification notes the repeated occurrence of one event after another. This gives the physical conception of causation. Physical science sees every event completely explained by the sum of events that have gone before. All phenomena consist of the transference of motion from the one body to another. Physical science does not ask why one event follows another, but simply determines in what conditions the event occurs—what are the previous states that have been observed. It deals with hypotheses, theories and laws, but these are simply more or less extensive classifications of phenomena. The hypothesis is an assumed classification of events to be tested by the facts. A theory is such a hypothesis of somewhat wide scope to which a large body of facts correspond. A law is a fixed order according to which events are known to proceed, but it has nothing of the psychic conception of purpose and force about it.

What, then, is the task of physiology? Thöle would define it as the physics of living beings. There is no essential difference between the material phenomena in unorganized and organized matter. Both are composed of the same elements, both obey the same general laws of physics,

(1) Berliner klin. Woch., Aug. 16 and 23, 1909.

such as gravity; both undergo similar chemical changes. So far as the material changes are concerned there is no reason for giving science a different character in the one than in the other. Physiology is to be regarded as the physics of organized matter. Any attempt to give it a wider field introduces confusion and uncertainty into its conceptions. As the physics of living matter it has nothing to do with the purpose of the phenomena of living beings; it does not ask why the heart beats, but what are the antecedent conditions which are followed by the heart's contraction. Thöle says:

“Whosoever defines physiology as the science of life combines the natural science of physiology with psychology and biology, and whoever identifies this science with biology is no longer dealing with an exact natural science.” This explains why some of the physiologists admit vitalism into their science and others reject it.

In the opinion of Thöle, the admission of the conception of a special vital force or of peculiar properties of the cells by which they have a self-activity introduces confusion into physiology and retards the advance of science, because men resting on this explanation cease to investigate the phenomena to determine the true physical cause, which alone can be considered as a true explanation. To state that the liver cell has a peculiar power by which it secretes bile offers no explanation of the secretion of the bile and delays the investigation of the physical and chemical changes occurring in the liver, which constitute the true explanation. Thöle says: “The self-activity of the cells is, in fact, nothing else than the old vital force, a will attributed to the individual cells. Whoever believes that he has afforded an explanation of a phenomenon by attributing it to the active functions and properties of the cells has got just as far as Empedocles, who believed that chemical combinations and decompositions were due to the love and hate of the atoms. Did this anthropomorphic method of thought give him any real insight into chemical processes? Likewise a vital activity of the cells does not advance our understanding of a physiologic phenomenon by a hair's breadth. By these anthropomorphic turnings and pictures not only nothing is gained but a distinct dam-

age is done, because when one is contented with such pseudo-explanations the scientific problem remains unsolved.

Cellular pathology cannot explain any phenomenon. It arises from the observation of unicellular organisms. But a one-celled monera is infinitely different from a cell in the complicated animal body in which it exists only in connection with the whole. "The whole exists before the parts, and the parts owe their existence to the whole," says Aristotle. But the cellular pathology erects an artificial boundary between the cells and the blood. But since the cell-protoplasm is fluid and there is no limiting membrane, there can be no exclusive separation and no distinction of an interior and exterior of the cells. The formation of bile and glycogen are not processes of the interior of the liver cells, but bile and glycogen are formed by the liver as a whole, in which we must include the blood of the liver possessing its peculiar physical and chemical characters.

The author refers to Ricker's teaching, which gave him a new view of the organic processes, and concludes that vital force is foreign to natural science. Those who attempt to introduce it are trying to solve problems belonging to philosophy by the methods of natural science, which must end in failure.

If vitalism be rejected the question next arises, What is the justification for teleologic conceptions in physiology? A teleologic explanation of nature takes its rise from the emotional nature of man. As an observer he notes the occurrence of muscular movements from his feelings and his will. He naturally carries over to the movements occurring in nature the same personal explanation. He experiences the shaping of his own movements to carry out a definite process, and he concludes that nature is also the theater of persons who are working with definite aim. These words *purpose* and *adaptation* become meaningless when applied to natural phenomena because they can only be determined by one who knows the mind of the person who has framed the objects or set in motion the processes which we observe. As this knowledge is beyond the power of man, it can form no part of science. The adaptation of nature is an expression of the feeling of the person to

whose needs or desires the phenomenon under observation conforms. A fall of snow serves the purpose of preventing the crops from freezing, but it also is adapted to the desires of the boy who wishes to play with his sled. But neither of these purposes affords any real explanation of the phenomenon. Thöle concludes, therefore, that teleologic conceptions must be rejected as forming no proper subject for scientific investigation.

Thöle thinks, however, that purpose and adaptation may be recognized by the philosopher, who may take into consideration the fact that life and nature have no meaning unless a teleologic explanation is introduced. The physical causation of phenomena and their teleologic and vitalistic arrangement and origin do not exclude, but supplement each other. The author discusses at considerable length the theories of Darwin and tries to show that they are insufficient as scientific explanations.

Darwinism is not scientific, but belongs in the category of philosophical speculation. In a case of mimicry, for instance, it affords no real explanation to say that the insect has come to resemble the stem and leaf on which it rests because such variations of form and color serve to protect it from its enemies, but a scientific explanation must deal with the chemical and physical processes by which the change in form and color have been brought about.

Medical science of the present day is completely under the influence of vitalism and teleology. The fundamental conceptions of organism and organ are teleologic. The body is conceived as a machine constructed for a conscious or unconscious purpose. Cellular pathology transfers these attributes to the cells themselves. It clothes them with active powers which cause the physical phenomena in accordance with a purpose, viz., the maintenance or restoration of the normal condition. The terms adaptation, compensation, regeneration, regulation, exercise and the like testify to the teleologic standpoint. The hyperplasia of an exercised muscle is represented as due to an effort on the part of the muscle to provide for the increased demands on it by increase in size. A true causal explanation would be that coincidently with the use of a muscle there is an irritation of the nerves of the blood vessels resulting in an in-

creased flow of blood. This is a fact capable of study. The increased flow of blood results in an increased supply of material to the muscle plasma, which is followed by the growth of the muscle.

It is not to be wondered at if, when those who deal with the pure sciences of physiology and pathology are so permeated by teleologic ideas, clinicians who are engaged in practicing an art whose basis is teleologic, the purpose of healing, should adopt the teleologic viewpoint. Hence we find Bier founding his theory of the treatment of disease on teleologic conceptions. His major premise is: the reactions of the body are efforts of nature to cure. The minor premise is: hyperemia is the most common curative process, for every inflammatory focus is hyperemic. Thöle says the first premise is an undemonstrated teleologic conception and the second premise is false (is an anemic infarct and an anemic focus of gangrene also hyperemic?), consequently the conclusion that hyperemia is a cureall is also false.

The unfortunate results of this method of regarding scientific questions is that the investigator is satisfied with the purposive explanation and fails to see that the true scientific question has not been answered.

BIOLOGY.

In an address on the relations of physiology to physics and chemistry J. S. Haldane¹ puts very clearly the failure of physiochemic theories to explain the phenomena of life. Following the Euclidian method he shows what a complexity of composition of the individual cell is necessitated by the idea that it reacts from mere chemical stimuli in performing its various functions. The nature of the specific functions of the cells of different parts of the body involves a sum total of enormous complexities of composition. This complexity increases with every new discovery of physiologic reactions.

Haldane holds that since the physiochemic explanation fails, physiology should choose a working hypothesis corresponding with the nature of the science and with the material with which it deals, viz., living beings. The char-

(1) British Medical Jour., Sept. 8, 1908,

acteristic of living beings is persistence of function and structure with changing material and force, so that it may be assumed that the identity of an organism is not physical identity, but what might be termed identity or persistence of plan. The unity of the organism is also a fact to be considered, and if this be remembered it will follow from this conception of living things that functions will be correlated with each other. This gives a good opportunity of testing the power of the working hypothesis. Applying this test to various functions of the animal body, it is seen to work excellently in explaining physiologic phenomena. If instead of seeking a purely chemical explanation of the production of animal heat in the oxidation of the materials of the body, it is assumed that the fundamental function is the maintenance of a certain body temperature, it is found that the mere oxidation of the tissues is only one part of a most complicated mechanism for maintaining body temperature, which involves in addition regulated circulation of the blood, the action of the sweat glands, the consumption of food, the growth of hair and other protective apparatus, etc. The more the subject is studied the nicer the adjustments are found to be. Haldane illustrates this subject also by the phenomena of respiration. The action of the respiratory center is found to be not a mere automatic periodic action, but to involve a very close response to the pressure of carbon dioxid in the lungs and in the blood.

Physiology is thus shown to be something larger and different from physical science and in the final analysis will probably be found to include the latter. Their relations must, however, be settled by philosophy. While physiology is concerned on the one hand with phenomena which involve physical and chemical laws, which, however, cannot explain the phenomena of life, it meets, on the other hand, phenomena of intelligence which the conceptions of physiology cannot explain, although they involve physiologic processes. We can, it is true, by a process of abstraction treat sensation from the purely physiologic side, as in investigating the physiology of the sense organs; but this is physiology and nothing else, for we are leaving out of account the distinctive elements of consciousness. At our

present stage of knowledge life is not intelligence, and men or animals as intelligent individuals involve a deeper aspect of reality than biology deals with. Our fundamental physiologic working hypothesis cannot be successfully applied to the phenomena of intelligence, and the sooner and more definitely this is realized the better for physiology.

In conclusion the author states his main contention as follows: "It is that in physiology, and biology generally, we are dealing with phenomena which, so far as our present knowledge goes, not only differ in complexity but differ in kind from physical and chemical phenomena; and that the fundamental working hypothesis of physiology must differ correspondingly from those of physics and chemistry."

R. W. Wilcox¹ discusses the therapeutics of old age. He suggests that it would be well to have presbyatrists as well as pediatrists and that more attention should be given to the diseases of old age than at present.

"Balfour makes the statement that the heart and brain escape senile failure. This is only relatively true. In the brain we find the sulci deepened, chronic meningeal degenerations, and, frequently, local softening. The heart changes in bulk, but the real senile change in it is a weakened myocardium. In the arteries we find atheroma, arterio sclerosis, arterio-capillary fibrosis (Gull and Sutton), and the capillary areas are obliterated."

Minot, in his recent book, has attempted to show that the essential change in old age is the relation of cell nucleus to protoplasm. In other words, the cytomorphosis determines age. He defines these laws of cytomorphosis as follows:

1. It begins with an undifferentiated cell.
2. It is always in one direction, through progressive differentiation and degeneration, towards the death of the cell.
3. It varies in degree, characteristically for each tissue (hence in the adult higher animals all stages may exist).
4. Reversed cytomorphosis is not known to occur.

Basing the law of age upon cytomorphosis, he presents

(1) American Medicine, April, 1909,

them as, (1) Rejuvenation depends upon the increase of nuclei. (2) Senescence depends upon the increase of protoplasm and upon the differentiation of the cells. (3) The rate of growth depends upon the degree of senescence. (4) Senescence is at its maximum in the very young stages and the rate of senescence diminishes with age; and finally his general conclusion is that natural death is the consequence of cellular differentiation. The weakness in this presentation lies in his third proposition.

For the brain, sleeplessness and loss of memory are probably the most striking symptoms; the inability to acquire new ideas, and this is perhaps best explained under the theory of Mosso, of a continual brain fatigue.

In the sleeplessness of old age hypnotics must be used sparingly. Probably the best is chloralformamid. A hot bath, temperature 102 to 104 degrees, will succeed more often and yield better results than any chemical hypnotic. To be avoided are hypnotics of the trional and veronal groups. Seven instances of hematorporphyrinuria caused by these drugs, have been in the aged, so far as Wilcox's observation goes.

"In the treatment of these conditions—vasodilators play an important role. The careful administration of thyroid extract will relieve high arterial tension, but that means a small dose to which a direct cardiac stimulant may or may not be added. Digitalis should never be used in the old on account of the marked spasm which its prolonged use tends to produce. Strophanthus is the drug of choice. Balfour in his little book lays great stress upon the use of strychnin for the senile heart. Better results have been obtained in Wilcox's experience from caffein sodio-benzoate in moderate dose, not only as regards the relief of cardiac symptoms, but in the improvement of the circulation. Arsenic iodid in small doses lessens to a marked degree the debility of the heart, and iron, in such form as can be assimilated, by increasing the oxygen-carrying capacity of the blood certainly is of marked benefit.

"Lung diseases in the old are chiefly senile bronchitis, emphysema, pneumonia, and a disease which is rather infrequently recognized, but is far more common than is

popularly supposed, pulmonary tuberculosis, the last running a chronic course and generally overlooked. The peculiarity of pneumonia in the aged is that there is not the tendency to recovery as in the young adult, but to extension, and this extension is probably due to the obliteration of the lymphatics, so that the exudate is absorbed with difficulty, and as a result we have forms of degeneration occasionally leading to abscess and gangrene.

"The important remedy in senile bronchitis especially and in other diseases of the lungs in the old is strychnin, and in the early stages, particularly of pneumonias, ammonium carbonate in frequent doses which when given in milk will usually relieve the conditions without disturbing digestion.

"The air of the apartment occupied by the old should always be dry; not the dry dusty air of furnace-heated houses, but clean air. It may be artificially dried by calcium chlorid or strong sulphuric acid. Inhalations have never yielded any brilliant results in the author's hands, those of camphor excepted. The patient needs no digestion-disturbing cough syrups and opium is absolutely forbidden."

For the symptoms referable to the kidneys, the use of nitrites and high intestinal irrigation are important.

Constipation can be avoided even with the pathologic conditions noted; physostigmin salicylate (eserin) in 1-60 gr. dose, at bedtime will increase peristalsis when other better known remedies fail. Phenolphthalein has been used by the author for seven or eight years and with uniform success. Massage is of very great importance, and used in connection with laxatives, yields brilliant results.

Wilcox gives the following prescription for relief of the itching senile skin. In consists of 10 per cent. of tincture of digitalis, 2 per cent. of hydrocyanic acid in the solution of ammonium acetate.

"Special directions: (1) Never less than five hours between meals. (2) No solid food between meals. (3) principal meal near midday. (4) All meals to be as dry as possible.

Avoid food likely to cause flatulence. Not more than five ounces of fluid with each meal. *Vinum lac serum* is

not an absolute rule. Alcohol only for those accustomed to its use. One half ounce of brandy or whiskey in three or four ounces of water; a single glass of port or sherry, ammontillado preferred.

Diet: Breakfast at 8 a. m. Small slice toast ($1\frac{1}{2}$ oz.) with butter; one soft-boiled or poached egg; or $\frac{1}{2}$ a small haddock, or other white fish. Three to five ounces of tea or coffee with cream and sugar. Tea may be replaced by cocoa or milk with hot water. Well boiled oatmeal (three or four ounces) with four to five ounces of milk may be substituted for tea.

Dinner 1 p. m. of two courses, i. e., fish or meat, pudding or fruit. White fish of short fiber, boiled, steamed or broiled. One-half a small chicken (white meat) or sweet-breads, game, lamb. One small potato, boiled or baked, or a small portion of spinach. Pudding, a simple milk pudding or rice, sago or tapioca or suet. Fruits, as ripe pears, apples, grapes 4 to 6 ounces, hot water to be taken if desired.

Tea at 5 p. m. with cream and sugar but no food. In place of tea, a teaspoonful of solid beef extract in hot water may be added.

Supper 7 p. m. White fish and one potato, or toast with butter. Milk pudding or bread and milk.

Bedtime 10 p. m. Five ounces of hot water to be sipped.

For thirst, beef tea or hot water, to be sipped four hours after each, or the principal meal.

"General directions: Avoid cold especially at night. Hot water bags carefully protected that no burns may arise (for burns on the old heal badly) are a source of great comfort to the aged. So many old people are found dead in bed for which no important cause can be ascertained save lack of warmth, that this subject should be emphasized. Among the devices of old people to keep warm at night, one may be mentioned. Boerhaave cites with evident approval the case of an old man who slept between two young persons and thereby "acquired a visible increase of vigor and activity."

Wilcox warns against overeating but does not entirely agree with Fletcher nor with Metchnikoff. He has in-

vestigated all commercial brands of artificially soured milk, all based more or less on the Metchnikoff theories and as yet is unable to say that he has found any results worth recording. Exercise which an old person can take is usually beyond what he thinks he can endure. If one begins with massage, follows with resistance movements and later succeeds in getting these old people out of doors, driving, or better still, walking, the relief of symptoms follows much faster.

SOME MEDICO-ETHICAL PROBLEMS.

The Professional Secret. G. Williamson¹ states that the principle that any information regarding a patient acquired by a medical practitioner in his professional capacity is the property of the patient and not of the doctor has been recognized since the days of Hippocrates. France, Germany, Belgium, Italy and most American States are more strict than Scotland and England in the observance of this rule. In France, the breach of this confidence is an offence punishable by imprisonment for a period of from 1 to 6 months in addition to the infliction of a fine of one to five hundred francs. The only apparent exception to this rule is the case of supposed lunatics, where it is considered essential in the interests of lunatics themselves and of the general public that medical men should be allowed to testify to what they have learned in their examination of these patients. A medical man is not allowed, however, to divulge anything brought to his knowledge through his professional dealings with his patient, even for the purpose of refuting any charge brought against himself, even though his patient waive his right to confidentiality, as although the doctor might thus be freed from the risk of a civil action for damages, he would still be liable to a fine and imprisonment for an infringement of the relative clause of the penal code. The enactment of the State of New York is as follows:—"No person duly authorized to practice physic or surgery shall be allowed or compelled to disclose any information which he may have acquired in attending any patient in his professional capacity, and

(1) *Edinburgh Medical Jour.*, December, 1908,

which information was necessary to enable him to prescribe for such patient as a physician, or to do any act for him as a surgeon." The Portuguese penal code says: "Advocates, confessors, physicians, surgeons and midwives are not obliged when giving evidence to reveal secrets which they may have discovered in the exercise of their calling."

In England the only occasion on which a physician may absolutely refuse to disclose information which he has obtained in his professional capacity in a court of law is where such disclosure would incriminate himself. Voluntary disclosure of information gained for an employer is a ground for action in Scotland. Whether a patient is protected in the same way is not decided, but is probable.

Under what circumstances, then, is a medical man legally bound or ethically entitled, without risk of a successful action of damages, to break through the rule of professional secrecy? Take the case of a medical man who has learned in his professional capacity that a crime is contemplated by his patient, or in which his patient would be implicated. If he remains silent, does he thereby become an accessory to the crime, or does he, by using his influence with his patient to prevent any such crime, clear his own conscience and fulfil his duty to the patient and to the State? The physician should be guided by the circumstances of the case, but beyond doing what he can to prevent the crime by personal appeal and such information as he may give to his employer, he need not take on himself the function of a voluntary informer.

Williamson says he can not see why the medical man should act as a voluntary informer whatever the nature of the crime. It is one thing to abstain from giving information voluntarily, but it is quite another thing to refuse to give information when called upon to do so by a properly constituted authority. Sir Matthew Hale, who was Lord Chief Justice of England about the time of the restoration, and was also a voluminous writer on law, and evidently a great authority, has laid down that "if a physician or surgeon professionally attend a felon sick or wounded, although he know him to be a felon, and know of the felony and do not disclose it, none of these acts would be sufficient to make the party an accessory after the fact."

In giving evidence in a court of law there has been great diversity of opinion expressed as to whether a medical man has the right to claim professional privilege in the witness box. There can be no doubt, however, that legally this privilege is only extended to the relationship of solicitor and client. But there is reason to believe that in some cases at all events where a medical man is asked questions the answers to which he considered would be a breach of his patient's confidence, the bench might support him in his refusal to answer. On the other hand, there are many distinct rulings to the effect that a medical man enjoys no professional privilege in the witness box.

Apparently a physician has the ethical right and also the legal one to disclose such professional secrets as are necessary to protect his own wife and children. If this necessity does not exist the secret should be held sacred even from his wife. While there appears to be no legal obligation to withhold information concerning a marital partner's health from either husband or wife, good sense would indicate that such secrets ought not to be revealed. Information imparted to an employer regarding a servant may not be a breach of legal privilege, but it is of professional privilege and should be withheld without the servant's consent. Consent for examination of a servant must be obtained from the servant and there are decisions that hold that the communication is privileged.

"There is yet, however, another class of cases coming under the head of employer and employé which is of special interest to us at the present time—that is the case of responsible employés of the railway and mercantile marine services who may be discovered to suffer from serious visual defect or some illness which may disable them suddenly, and thus seriously endanger the public. These cases are perhaps the most difficult of any, and unfortunately, so far as I can find, there is no decision in a case exactly of this kind. Take, for example, the case of a driver of an express train who consults a doctor and is found to suffer from absolute color-blindness or from epilepsy. What is the medical man's duty if he is unable to persuade his patient to go off work and if, indeed, he knows that the man continues at his post? I assume that

the man has gone of his own free will to consult the doctor and is not sent by the railway company to their medical adviser, so that he is employer as well as patient. Should the medical man inform the man's employer, in this case a superior official of the railway? There is something radically wrong where professional etiquette for the shielding of one obstinate man should stand in the way of safeguarding the lives of the public."

Is a physician who may be required or permitted to give evidence in a court of justice warranted in communicating the facts to which he will testify to an attorney before the trial? This has been decided in the case of *Mrs. McEwan vs. Sir Patrick Heron Watson* in which the physician had communicated the results of a previous examination to Mrs. McEwan's attorneys before the trial. Watson appealed to the House of Lords. The Lord Chancellor after stating that it was settled law that a witness is absolutely protected from any action being brought against him in respect of evidence he may have given, said that, so far as he knew, the question of whether that privilege extended to statements made in precognition had been raised for the first time in this case. "It appears to me that the privilege which surrounds the evidence actually given in a court of justice necessarily involves the same privilege in the case of making a statement to a solicitor and other persons who are engaged in the conduct of the proceedings in courts of justice when what is intended to be stated in a court of justice is narrated to them. The communication complained of is no communication to strangers—to persons outside the litigation."

FAKE MEDICAL WRITE-UPS.

The German Medical Press Association has declared its purpose to use all available resources to prevent the insertion in the columns of the journal under editorial supervision of unreliable medical write-ups of proprietaries, in place of a reliable and suitable publication in the advertising columns. The editor must have the right to refuse advertisements which seem objectionable, as well as to reject original articles or reports whose acceptance is made

conditional on the insertion of an advertisement. The association further refuses to sanction the advertising of remedies the composition of which is concealed by the manufacturer. In case an advertisement is refused, the editor in question shall notify the president of the association in order that all the members of the association may act in concert in regard to it.

Especially important is the resolution adopted in 1906 to prepare a "black list" of authors who make a business of writing papers for pay, in the interests of the manufacturers, on the chemical or other products of their factories. The writings of such authors are neither to be published in any of the journals belonging to the association nor summarized for their columns in case they have appeared in other papers. This resolution has seemed necessary, because there is a group of unscrupulous physicians who prepare papers about new remedies without having tried them, indeed, without having the clinical material at their disposal on which to try them, and they do this exclusively for pecuniary profit. Such physicians offer their services in this line systematically for a larger or smaller remuneration to the various manufacturers. These write-ups are then spread broadcast by the manufacturers as advertisements to start a propaganda for preparations of more or less value, since printed statements never fail to make an impression on the credulous medical and lay public. No proof is needed that this custom is injurious to the interests of science and of the sick. By the resolution adopted by the German Medical Press Association, a surely not ineffective means has been obtained for reducing this evil, and the results so far have been quite manifest.

MEDICOLEGAL.

Legal Rights of Physicians. A. N. Taylor,¹ a member of the New York Bar, explains the legal rights of the physician in regard to his relations with his patient.

The physician is not obliged to undertake a case, but

(1) Medical Record, April 24, 1909.

having once taken charge of a case he is bound to give it proper attention until it is time to discontinue his attendance, although he can terminate the relation by giving due notice. In his treatment he is obliged to use reasonable and ordinary care and diligence and to apply a reasonable degree of skill. The skill must be that possessed by the average physician practicing at the time in similar localities and the treatment must be in accordance with the rules of practice recognized in the school of medicine to which the physician belongs. In this respect clairvoyance has been held not to be a school of medicine, but Christian Science has. The physician must give proper directions to the patient as to his care of himself during his illness and in convalescence. The physician must use his best judgment, but that does not excuse him if he fails to use means which are recognized and generally accepted by the profession, a departure from the established practice being made at the physician's peril. These obligations are binding even in the treatment of charity patients. The physician does not guarantee to cure, nor even to benefit his patient. Consent to an operation must be obtained, but the wife may consent for herself, the consent of the husband being unnecessary, though desirable. Autopsies are not permissible without consent except when necessary to determine the cause of death, in which case the coroner should be called on. The right of consent belongs to the husband or wife, then to the children or in the absence of children, to the father, then the mother, then brothers and sisters, according to heirship relations at common law.

Without express contract the binding fee is that usual in the vicinity, unless the physician has been expressly called from a distance. Operations are to be charged at the customary fee, but greater latitude is allowed than in connection with visits. The patient is bound to pay for the visits of a consultant unless the consultant has been expressly notified of a different arrangement.

In order to bring suit the physician must be a legally qualified practitioner, and must prove his license. The next step is the proof of employment; if the physician is employed by the party to whom the services are rendered or by a party who is under obligations to provide medical

services for the patient, then proof of such employment is not necessary. Under such circumstances proof that the services were rendered and accepted will be sufficient; but if the employment is by some third person who is not primarily liable for the services rendered, this step in the case is very important and the character and sufficiency of the proof are matters to be submitted to counsel.

The next step in proving the claim is to show the services rendered; this is a step which is frequently if not usually fraught with difficulty.

Laws have been enacted in many States to the effect that a physician shall not be permitted to testify to information which he shall have acquired in attending a patient in a professional capacity and which shall have been necessary to enable him to act in that capacity. This places the plaintiff in a trying situation, where he cannot testify with any degree of detail regarding the services rendered, and yet he must prove the rendering of the services or fail in his suit. Under such circumstances he will, to use the words of Mr. Justice Hait of the Court of Appeals of New York, be permitted to "testify to his employment, the number of visits made, to the examinations, prescriptions and operations, and if the defendant objects to his describing them, he may testify as to their value."

In giving testimony in proof of the services rendered it will be difficult, if not impossible, when considerable time has elapsed since the rendering of such services, for the physician to testify with sufficient certainty and accuracy as to the items of service without having recourse to his books of account. The question of admissibility of evidence in support of the physician's claim is a technical one upon which counsel must pass, therefore it is not thought advisable to go into the question in great detail. A few words may, however, well be devoted to the manner of keeping books of account. It may upon the trial be necessary to state more or less particularly the nature of each service rendered, therefore the book of original entry should be so kept that by referring to it years after the services charged were rendered, the physician may be able to testify particularly as to each item, and if permitted, describe the character of the services rendered. It

must be remembered, however, that in most States information gained while attending the patient professionally is not permitted to be disclosed in court, therefore in such jurisdictions a book of accounts, which plainly and explicitly states the character of ailment for which the patient is treated, will manifestly be inadmissible. It has been suggested by the writer of this article that this difficulty may be overcome if the physician will adopt a code of arbitrary signs and characters whereby he may be able to describe the ailments of his patients and the character of the services rendered to them in such a way that this portion of the information contained in the book will be wholly unintelligible to all others than himself, and therefore not subject to the objection that it discloses confidential communications. If the accounts be kept in this way, each item being charged separately under the date upon which the service was rendered with a specific sum charged after such item, then the book will be admissible to show dates and amounts, and may also be used on trial by the physician for the purpose of refreshing his memory, and enabling him to testify in detail so far as the law of the particular State will permit.

The foregoing anticipates that the party against whom the suit is brought is still living. Should he be dead and a suit against his estate become necessary, the situation becomes further complicated by the fact that the physician will not be permitted to testify as to any transaction with deceased relative to the subject matter of suit. In such a case, there will be nothing for him to do but submit his books and corroborate them by the testimony of some one else, and indeed, whether the books will be admitted in such a case is not clear, there being conflicting decisions upon the question. When the books are held admissible, and are not so kept as to show the nature and date of each service rendered and amount payable therefor, or when such information is partly recorded in characters unintelligible to others than the physician, then they are subject to the objection that they are too indefinite to prove the account, and are of no value except when supported by strong corroborating evidence. If, on the other hand, the books contained all of these necessary facts in characters intel-

ligible to the court, they would, in States recognizing professional communications as privileged, be wholly excluded upon objection by the opposing party. In cases of this sort the person most frequently capable of corroborating the physician's books and testimony is his wife; but is her evidence competent? At common law the wife is not permitted to testify for or against her husband in a suit to which he was a party. This rule is now altered by statute in most States but still remains a law in a few. In those States in which the wife is competent as a witness under ordinary circumstances, the courts are divided upon the question whether she will be permitted to testify when the other party to the suit is dead or insane, the courts of Maryland, Mississippi, Nebraska, New Hampshire, New York and South Dakota holding that she will; the courts of Illinois, Indiana, Iowa, Maine, Pennsylvania and West Virginia holding that she will not be permitted to testify.

Examination Without Consent. In a review of various medicolegal matters G. Williamson¹ says that in the case of a maidservant being sent to her employer's doctor to be examined, the doctor must be very careful that the maid consents to the examination. The case of *Latter vs. Braddell and Wife and Another* is a good illustration of this. Latter was a maid in the employment of the Braddells. Mrs. Braddell, thinking the girl was pregnant, accused her of it, and on the girl's denial had her subjected to a medical examination. The girl apparently made no objection to the examination, undressing and lying down quietly to be examined. She afterwards brought an action against her master and mistress and the doctor. The case was first tried at the assizes, but the jury, being unable to agree, were discharged. The case was next tried before Mr. Justice Lindley, who withdrew the case as against the Braddells from the jury, and as against the doctor, instructed them that they must be satisfied that the girl had been overpowered by force or by threat or terror of actual force. The evidence was against this being the case. On the case coming before the Court of Appeal, Lord Justice Bramwell upheld the instructions given to the jury by Mr. Justice Lindley, and thought there had

(1) *Edinburgh Medical Jour.*, December, 1908.

been no evidence that the girl's wish had been overborne by violence or threat. Lord Bramwell added that he thought the doctor had acted kindly throughout, but stated that the wish of the master and mistress was no authority in the eye of the law for a doctor to examine a patient against her consent. His lordship was of opinion that the proceeding was altogether a high-handed one.

Williamson suggests that *cases will soon come up in connection with the law for medical inspection of school children*, as he does not think that a medical officer has any legal right to enter a school and examine these children without the consent of the guardians or parents.

Operation Without Consent. Williamson¹ continues from the preceding article with the citation that an operation done on a minor without the guardian's consent or on an adult without expressed personal consent would be an assault. Before operating on a married woman, it is well, if possible, to have the husband's consent also, but it has been decided that a husband has no power to withhold from his wife the benefits of such surgical treatment as her case requires. But supposing during an operation a surgeon discovers something more than he expected, which, in his judgment, calls for a more extensive operation than he anticipated, and for which he has not got the patient's consent, what shall he do? Probably, in the absence of any distinct instructions from the patient or guardian limiting the extent of the operation, he would be exculpated if he exceeded his instructions. The verdict in the case of *Miss Beatty vs. Cullingworth* supports this view. In this case the surgeon had distinct instructions from his patient, given on several occasions, that if one ovary was found to be diseased and the other healthy, the diseased one was to be removed; if both were found to be diseased, neither was to be removed. Even at the last moment when Miss Beatty was on the operating table, she repeated these instructions, and the answer was, "You must leave yourself in my hands; I know your wishes. I shall not remove more than I can help." She then quietly lay down and took the anesthetic. Both ovaries were found diseased and both were removed. The jury found that she

(1) *Edinburgh Medical Jour.*, December, 1908.

had given tacit consent. Mr. Justice Hawkins in his charge to the jury said: "If a medical man with a desire to do his best for his patient undertook an operation, he should have thought it was a humane thing for him to do everything in his power to remove the mischief, provided that he had no absolute instructions not to operate." Although there is no doubt that Dr. Cullingworth did what was best for his patient, I think there is as little doubt that he committed a great error of judgment. Clearly his course was either to respect the instructions of his patient or to decline to operate under any such restrictions. In a recent American case a surgeon told a lady that she required to have a slight operation. She gave her consent, and he performed a hysterectomy. The patient sued the surgeon, and the court, expressing the opinion that a surgeon was not entitled to remove any organ without the patient's complete concurrence, awarded substantial damages.

Anesthetist's Liability. A. D. Cowburn¹ discusses as follows the relative responsibility of the surgeon and the anesthetist:

There does not appear to be any recorded case in England in which either criminal proceedings for culpable negligence or a successful civil action has been brought against a medical man on account of a death resulting from or occurring whilst under the influence of a general anesthetic, which is probably the reason why no authoritative ruling laying down the exact degree of responsibility attaching to the operator and the anesthetist respectively has ever been given. In all probability each case would be left to the jury to be decided in the light of the particular circumstances, but as the question has been the subject of much recent discussion the following observations, though unsupported by direct authority, are submitted for consideration.

It is well understood in the profession that the administration of an anesthetic is a grave and responsible duty requiring undivided attention and unremitting vigilance on the part of the administrator, who, as such, has nothing to do with the operation *per se*, except in so far

(1) British Medical Jour., June 12, 1909.

as it affects the administration. If negligence be proved in respect of such administration, the medical practitioner actually administering the anesthetic is liable, not the surgeon who is engaged in the operation. But if the surgeon take upon himself to decide the particular kind of anesthetic to be employed, or the apparatus to be used, or the amount of anesthetic to be administered, he would probably be held jointly responsible with the anesthetist for any unfortunate result to the patient—assuming negligence to be proved. Liabilities as against the administrator might arise from omitting the duty of careful physical examination, of previous appropriate preparation, or from leaving the patient before the administrator has had reasonable grounds for assuring himself that the case could be so left in safety.

Liability, it is apprehended, might also arise from committing the irregularity of assisting the surgeon while engaged in the administration of the anesthetic (urgent necessity excepted).

But where a nurse or student is engaged in the administration of an anesthetic under the direct supervision of a medical man, there (it is apprehended) the relationship of master and servant exists, the nurse or student being under the direct control of the medical man as to method, quantity and kind of anesthetic employed; hence the qualified man is responsible. Where circumstances compel an operator to accept the services of an unskilled or non-professional person, the operator must take the entire responsibility of the administration.

It is customary, though not the invariable practice, for the surgeon to select the anesthetist, and generally control the procedure of the operation. If an operating surgeon can be properly charged with selecting an anesthetist who has not had sufficient experience to enable him to give the anesthetic properly, in case of a fatal result the surgeon might be held liable.

But apart from gross negligence, which is probably of the rarest occurrence, it is submitted that attempts to make medical practitioners liable to legal consequences for deaths occurring while an anesthetic is being administered would damage humanity at large.

A German Decision Against Eddyism. Our age is rich in contrasts. In spite of the great enlightenment in the field of religion, mysticism flourishes today more than ever, and to this latter circumstance is owing the introduction and spread of Eddyism in Germany. In spite of repeated exposures by the press, the representatives of this form of quackery still find believers who seek the help of God for the removal of disease in return for money payments to his unworthy representatives. Lately a Berlin court has expressed itself in no ambiguous terms regarding Eddyism, and the decision, which shows an unusually accurate conception of the matter, even for a judge, should be widely known.

A laborer of that city whose wife and child had been treated unsuccessfully by a prayer healer sued for the repayment of 60 marks which he had paid for the treatment. Although the lower court dismissed the suit, the higher decided that the prayer healer must repay the 60 marks with interest. In the decision it was emphasized that the contract which the complainant had made with the prayer healer was against good morals. It would be completely incompatible with healthy social conditions if judicial recognition should be given to contracts by which one party, for a stipulated sum, should make use of his pretended intimate relations with the deity in order to induce a pretended intervention of supernatural power in the life of other persons. The belief that there is some power of special divine grace for healing the sick may exist in certain circles. But laying claim to such a healing power in connection with the exercise of a trade for making money based on such healing power is contrary to the general moral sentiment and can not demand the protection of the courts. Moreover, the public interest in a regular system for the care of health is endangered if, by the influence of Eddyism, patients are deprived of suitable and timely treatment by physicians who should be the chosen guardians of the public health.

Aside from the fact that by this decision the attention of the public is called in a highly satisfactory manner to the physician as the true helper in case of sickness, many Eddyite adherents may find themselves obliged to give

up their business. For if their patients can demand their money back and enforce the demand by law, they will hesitate to spend their time and apply the power of their prayers at such risks. In the interests of public health it would be very gratifying if the decision quoted should have so favorable a result.

WORKMEN'S COMPENSATION.

W. H. Allport¹ reviews the history of legislation with regard to industrial accidents. He shows the inapplicability of the doctrines of common law to the conditions of modern industry and presents the following summary of the English law for workmen's compensation:

Any workman sustaining an injury or contracting certain diseases in consequence of employment may demand compensation from his employer under this act. But should he choose, he may proceed—if the employer has been guilty of personal or wilful negligence—by civil suit under the common law, or under the Gladstone act; and should he lose his civil suit he may still seek compensation under this act of 1906. The act does not bar proceedings against employers to assess fines for violation of other laws (in this respect the act bears a strong resemblance to the laws of many continental countries).

Ample provision is made for the adjustment of compensation, either by previously arranged agreement, by arbitration or by the stipulations of certain approved friendly societies. Arbitrators are appointed by the county courts; medical referees are appointed by the secretary of state. These fees are paid out of a fund provided by a separate act of parliament.

Contracts to relinquish claims for prospective personal injury are void.

Unless the employé is seriously injured, or dead, he or his heirs cannot recover for injuries due to wilful or flagrant misconduct.

Employers must make returns to the secretary of state of all accidents and the compensations allowed therefor.

The plaintiff's attorney—if one is employed—has no

(1) Chicago Med. Recorder, August and September, 1909.

lien on the amount recovered, and the county court under whose jurisdiction the arbitration takes place decides his fee.

"Workman" means any person working continuously in the service of an employer, whether by way of manual or clerical work, or otherwise, provided he earns less than £250 yearly. Only those performing manual labor are included if their earnings are over £250, and casual employes, police officers, out-workers and resident members of the employer's family are excluded.

An examination by a medical referee is a *sine qua non* in all cases occurring under this act. The examination may be repeated, if necessary, at proper intervals.

In case of death through accident, the dependents of the workman receive not less than £150 or more than £300, the amount paid being estimated on the basis of three years' average wage. In case of total or partial disability the workman receives up to 50% of his average weekly earning capacity, but not to exceed £1 per week. The amount to be paid for partial disability is decided by the arbitrator after taking the opinion of the medical referee and other qualified experts. Where a weekly payment has been continued for 6 months or more, the employer may elect to cancel the same by payment of a lump sum yielding an income—if invested in the Postoffice Savings Bank—equal to 75% of the annual value of the weekly payments. This is optional with the employer. The entire burden of those payments falls on the employer, although the employé may increase the payments by approved insurance, and the employer may protect himself by the same method. All death payments are made to, and handled by the county courts, and the courts are empowered to administer and invest these funds in such manner as they see fit.

Ample provision is made for the enforcement of all the stipulations of this act and for preference of pension claims in case of insolvency of the employer.

The French law comprises 4 titles and 34 articles and applies to all machine-driven industry, except such as is moved by man or animals, and provided the work of the injured employé is interrupted for more than 4 days.

Two thousand four hundred francs is the maximum full earning capacity which can be used as the basis of compensation; any excess of earnings beyond 2,400 francs is computed at one fourth of the excess. For total and permanent disability, the workman receives a pension equal to two thirds of his salary computed as above. For partial or temporary disability, he receives one half of the reduction in his wages caused by the injury. Cost of surgical attendance is paid by the employer.

In case of death, 100 francs is allowed for funeral expenses; the wife secures a pension of 20% of the estimated wages of the deceased, and the orphans receive 40% for the loss of one parent, and 60% for the loss of two. The dependent relatives of a workman without wife or child may receive 30%.

All pensions are payable quarterly and cannot be assigned or seized. Revision of a pension is allowed after 3 years, on proof of change in the degree of disability. The payment of a pension is guaranteed, either through turning over the capital necessary to produce it, or through insurance—approved by the state—in mutual insurance societies, or unions of employers, the former within the large establishments and participated in by both employers and workmen, the latter similar to the trade groups of the German empire. These insurance contracts, however, are very strictly supervised by the government and any waiver of rights is absolutely barred.

Certain objections have been made to the laws as last modified: 1. The law does not specify exactly what are—and what are not—industrial accidents. This failure of exactness has given rise to many disputes over hernia, varicocele, piles, varicose veins, etc. 2. It makes no provision for accidents producing injuries not resulting in loss of earning capacity,—such as, disfigurements, deformities, painful conditions, etc. 3. It tends to discriminate against the employment of married men through obliging employers to pension their survivors.

The Workmen's Insurance system of the German empire is organized as a bureau of the Department of the Interior. Each State of the Federation has also its own Bureau of Insurance controlling industries located entirely

within the State. The method of operation of the State Bureaus is identical with that of the Imperial Bureau.

The Imperial Industrial Insurance Bureau is composed of a president, with two directors and a number of other officials appointed for life by the Emperor, and four directors selected periodically from the Bundesrath to represent the workmen. The Bureau has charge of the details of the system—collects statistics, makes rules and reports, and serves as a court of final appeal.

Operating under the authority of the Bureau are the "Courts for Industrial Insurance Claims," composed of one government official and two representatives each from the employers and the workmen. These courts have jurisdiction over all cases not settled by the trade committees, but in certain cases their decision is not final and appeal may be taken to the Bureau.

The investigation of accidents is made by the police and reported to the Bureau, and it is also the duty of employers to report all accidents, failure to do so promptly entails a heavy fine.

There is no trial by jury and the court takes testimony somewhat as an investigating body, usually without the intervention of attorneys representing either interest. The court is authorized to appoint medical examiners and experts, and the examination cannot be refused. Awards, pensions, allowances and expenses are paid promptly by the Postoffice Savings Bank, on vouchers issued by the courts or by the trustees of the trade groups. The bank is reimbursed once a year by the trade organizations, without payment of interest charges, in the manner indicated in a subsequent paragraph.

The various industries are organized into *groups of trade units* based on a careful study of their co-efficient risk, and the common interests of each group are in the hands of trustees, who collect fines and assessments, disburse money, make reports, recommend rules and serve as the medium of intercourse not only between the trade groups and the Bureau of Insurance, but also between the employers and the trade unions. The groups, although possessed of a certain limited internal autonomy are under the direct supervision of the bureau. Operating under and reporting

to the trade groups are committees, whose duty it is to adjust questions of minor injury and who coöperate with the surgeon and with representative committees from the workmen in the determination of extent of injury and proper period of disability.

Should no agreement be reached between the injured workman and the trade committee, the case is carried before a Court of Industrial Claims, having full authority to call lay and expert witnesses. Inasmuch, however, as questions of negligence never arise, except where its extreme criminal character sends the case before another tribunal, the duty of the Insurance Courts consists largely in a determination of the injury and the extent of disability arising therefrom.

The amount of assessment—including both the annual liquidation and the contribution to the reserve fund—paid by the trade groups and by the industrial units comprising each group, is determined by the Bureau, after a periodical study of the statistics and of the annual liquidation with the Postoffice Savings Bank. The groups are allowed to graduate assessments against members according to the statistical records of each member, and danger classes are authorized, in which are included especially dangerous trades, as well as those industrial units whose accident statistics are high. A transfer of a trade unit can be made from a higher to a lower class if it can be shown that his statistical record for a given period warrants such transfer.

In order to stimulate still farther the effort to reduce the number of accidents, committees representing both employers and workmen are designated to coöperate with the Bureau in the preparation of rules and penalties for the prevention of accidents. These rules have full legal force. Fines go into the fund for insurance against sickness.

Should a trade group be called on to pay indemnity for an injury sustained through the carelessness, negligence or intent of one of its units, which has been proven in the Criminal Court, or which the group through its authorized representatives has been able to demonstrate, redress is allowed the organization against the trade unit by which the former is reimbursed for any money paid out

to meet the unusual loss. This redress applies, however, only to proved criminal negligence or intent of the employer himself, and not to that of his representatives. Since such damages may have to be liquidated by the payment of a lump sum, trade groups are allowed to take out private insurance against these unusual losses.

For all those workmen earning 2,000 marks and under by manual labor, insurance in a Sickness Insurance Fund is compulsory and guarantees protection against sickness, old age, invalidism and against the first 13 weeks of disability resulting from injuries. To this fund the workmen contribute $\frac{2}{3}$ and the employer $\frac{1}{3}$. During 4 weeks of his disability the workman receives from this fund 50% of his average wage for total disability and a proportionate amount for partial disability. If disabled for more than 4 weeks, to this amount paid from the Sick Fund is added 16 $\frac{2}{3}$ % paid by the trade group (employer) up to the end of the thirteenth week. During this period the expense of medical and surgical care is paid out of the Sick Fund.

Insurance against accidental injury is compulsory for all those earning 3,000 marks or under by manual labor. Assessments to meet the requirements of this fund-reserve, administration, pensions, death losses, surgical and funeral expenses and weekly indemnities beyond the fourth and thirteenth weeks of disability are levied altogether against the employers and are payable at the end of each year by the units to the trade group and by the latter into the Postal Savings Bank on receipt of a yearly statement of moneys disbursed. The government through the Post-office Bank thus becomes the guarantor of the scheme. Disbursements are made by the bank, in advance of the yearly assessments, upon presentation of suitable vouchers from the trade association, from the courts or from the Bureau of Industrial Insurance. The bank charges no interest; and no money, beyond the reserve fund, is tied up in advance to meet the payments.

For all injuries received during employment—regardless of ordinary negligence or any former liability under the common law—the workman receives compensation; unless the disability is not more than 3 days, or unless it arises in consequence of gross negligence or an illegal act—in

such latter cases the compensation may be either refused or reduced.

After the thirteenth week the employer—or the trade group—meets the entire disability expense. For total disability, the employé receives 60% of his average wage if under 1,500 marks; if over 1,500 marks he receives compensation based on 60% of 1,500 marks plus one-third of the excess. If the injured employé is helpless he may receive up to 100% of his average wage, especially if he was entirely innocent of the cause of his disability. For partial disability, an estimated payment is made, based on the amount of disability, and the latter is not held to be represented strictly by loss in earning capacity (e. g. hernia, piles, one finger, etc.).

If he wishes, the injured party may elect to be maintained at a hospital or home for disabled. Pensions up to 15% of the average earnings may be paid off *en bloc* through the Postoffice Savings Bank, by estimating the value of a principal producing the given pension.

Funeral expenses are paid by the trade group (employer) and are graduated from a minimum of 50 marks up to one-fifteenth of the average annual earnings of the dead workman.

Death pensions are payable to dependent heirs up to 60% of the annual wage, if the latter is less than 1,500 marks. If over 1,500 marks, only one third of the excess is taken in making the computation. The wife's pension is 20% or more, and the balance may go to children, needy dependents, and grandchildren.

Only under certain conditions, and in especial cases where permission is given by statute, may private insurance be taken out. In the small industries, not joined to the trade groups, such insurance is permitted, and the groups may insure themselves against certain claims arising through extra hazard, or through prosecution of their units for criminal negligence, etc. But no insurance company or its agent is allowed to take part in the settlement, or in any way to come between the parties to the dispute.

Should changes arise in the condition of a workman receiving a pension, which are attributable to the injury upon which the pension was originally based, the amount of the

pension may, after 5 years, by an order of court and after suitable investigation, be increased or diminished.

Suits conducted under the ordinary processes of civil law are barred from the Courts for Industrial Claims, except only where such arise through disputes over the division of awards, family rights, etc. The insured workmen have their own trade organizations (trade unions) and are not represented in the incorporated trade groups of employers. In the preparation of regulations, etc., designed to secure better protection against accidents, workmen's committees meet committees from the employers and the representatives of the Insurance Bureau.

CRIMINAL ABORTION.

W. B. Dorsett¹ calls attention to the frequency of criminal abortion and to the fact that the laws are not yet sufficiently explicit to secure the conviction of the abortionist. The indifference of the clergy, of the press and of society in general throws an added responsibility on the medical profession. He cites a statement of Justice John Proctor Clark to the effect that 100,000 abortions are annually committed in New York and to an estimate of Dr. C. B. Bacon that from 20 to 25% of all pregnancies terminate in abortion and that of this per cent one half are from induced abortion. Dorsett proposes two remedies: 1. The obligatory teaching of medical jurisprudence and medical ethics in its true sense in our medical colleges. This should be statutory, and medical examining boards should be empowered to enforce the laws of their States and to declare all schools not requiring a full course in medical ethics not in good standing and their graduates ineligible to practice medicine. 2. The enactment of good and sufficient laws and the amendment of insufficient laws now on our statute books.

PROPRIETARY MEDICINES.

The nostrum problem is discussed from the standpoint of the country physician by H. H. Pattison.² He does not

(1) Jour. Am. Med. Assoc., Sept. 19, 1908.

(2) Ill. Med. Journal.

attempt a definition of nostrum or proprietary, but considers that those preparations which have a definite formula and are not advertised to the laity are permissible. Phenacetin for instance is a substance having a definite composition and official in the U. S. P. under the name acetphenetidin. When prescribed under this name the substance obtained is not always of good quality. When a prescription for the official substance will not bring good results the author considers it good practice to use the coined, proprietary name. The physician can not always work out his own formulæ unless he has an exceptional knowledge of pharmacy, and hence his need has been supplied by the adoption of standard formulæ in the U. S. P. and National Formulary. These formulæ are standard and supply almost all the needs of the physician; they have the great advantage that physicians can consult intelligently with each other and one can get medicines of the same composition and quality in any part of the country. Because physicians were not ready to write individual prescriptions for every case and because pharmacists were not always able to manufacture the official preparations, manufacturing pharmacists have undertaken to supply these formulæ and preparations slightly modified so that they could be controlled by the special manufacturer. This has led to a great multiplication of such compounds and mixtures and to a tendency on the part of the physician to accept the advice of the detail man and the manufacturer as to the proper treatment of many diseases. Dispensing on the part of physicians has had the same tendency to make the physician merely a dispenser of ready made preparations.

[The remedy is naturally that the physician should attain the ideal position in which he will not use any remedy whose composition he does not know and which he has not determined by careful study to be best suited to his patient's condition and will insist on his patient getting it from such a source as will ensure its being of good quality. In some cases he will need to specify a certain manufacture, sometimes he will do best by getting it of his local pharmacist; sometimes the best way is to dispense it himself.]

THE MEDICAL PROFESSION IN EUROPE.

The following statements regarding conditions in Europe and the problems which occupy the attention of the medical profession there are derived from the foreign letters of the *Journal of the American Medical Association*, and as these letters are unsigned, are credited simply to the *Journal*.

Organization of the Medical Profession. The physicians of Europe are organized both legally and socially. The public organization, which is regulated by law, has control of many matters of ethics which here are left to voluntary associations. The following description of the organization in Germany will give an idea of the scope of these regulations:

"The German empire is a federation of states which recognize the German emperor as their federal head in matters pertaining to the empire at large and as commander in war, but other affairs are regulated by each state for itself. For this reason the public organization of the medical profession is not exactly the same for the entire German empire.

"In Prussia the laws provide for a *medical council*, the *Aerztekammer*, in each province. Its functions embrace the discussion of all questions and affairs which concern the medical profession or the public health. The local authorities are directed to give medical councils opportunity to express their views on appropriate questions, especially those which concern the public health. The members of the medical council are elected by the medical voters of the province in good standing. Elections occur every 3 years, and one representative in the medical council is elected for each 50 physicians who have the right to vote; the council elects its own president. Each medical council has the right to appoint a delegate to the several official medical bodies, including the National Scientific Commission for Medical Affairs. Each medical council is empowered to require from the physicians entitled to a vote within the council district a yearly contribution for defraying its expenses. The amount of this contribution must be approved by the governor of the province. In the province containing Berlin the assessment is \$2.50 for each physician

plus 5% of his income tax. From the income obtained in this manner the medical councils not only defray the costs of administration, but also support departments for the assistance of physicians in need. The Berlin medical council appropriates every year to this department the sum of 50,000 marks (\$12,000).

"The right of discipline over the individual physicians of the election district was formerly in the hands of the president of the medical council, but a law passed in 1889 established a *medical court of honor* in every medical council district, with a superior court of appeals for Prussia at large. This ethical jurisdiction and participation in the medical councils does not extend to army and navy surgeons and other government medical officials. The court of honor is chosen from the members of the medical council, but in addition it includes a judge from some ordinary court, which is of great importance with reference to its transactions. The court of honor has as an ethical council the function of settlement of disputes which arise in medical practice in the relations between physicians themselves or between a physician and another person. On the demand of any physician a decision may be rendered as to his conduct. It has also the authority to impose punishments on those physicians who act counter to medical ethics. The punishments of the court of honor consist of warnings, notices, money fines to the extent of 3,000 marks (\$720) or temporary or permanent withdrawal of the right to vote or be elected as members of the medical council.

"The medical councils in the other German states differ in some respects from those of Prussia. In some of the federated states there was too much opposition to the organization of courts of honor, and none has been established in Württemberg, Hesse, Bavaria, Hamburg and Elsass-Lothringen, while Saxony, Baden, Oldenburg, Anhalt, Braunschweig, Schaumburg and Lübeck possess them. None of the other German states has as yet this official organization of the profession in medical councils and courts of honor."

It must be remembered that while in Germany the requirements for entrance to the medical professions and the regulations governing the actions of those who are entitled to call themselves doctors are determined by law, anyone

with very slight restrictions is permitted to undertake the treatment of disease.

Unification of Professional Regulation. "It is of special interest in connection with the foregoing, that the executive committee of the Prussian medical councils has just published an ordinance for regulating the professional relations of Prussian physicians, which is to be submitted to all the Prussian medical councils for discussion and determination. In a number of the German states there have been for some time ordinances of this sort. The Prussian medical councils have also for the most part adopted such regulations for the physicians of their own district. While there are no essential differences between these codes, there are some inequalities, and from a practical standpoint it is very desirable that a uniform code should be adopted for the entire profession of Prussia, so that what is regarded as permissible in one district should not be condemned in another, and *vice versa*. Public advertisement and even private offer of medical services are forbidden. In this are included signs of private dispensaries, as well as those indicating hours for free treatment, the recommendation of private methods in the public papers, reports of cases in lay periodicals and the publication of testimonials. However, the beginning, interruption and resumption of practice, change of residence, etc., may be publicly announced for a few times. The owners of sanatoria and similar institutions may be permitted frequent notices in the newspapers by the executive committee of the medical councils. In addition, the buying and selling of medical practices, as well as the agency for such transactions, are forbidden; likewise, the treatment of patients exclusively by mail; also giving testimonials for secret remedies or for medicines in general for the purpose of commercial advertisement. Also the physician is not permitted to treat patients in conjunction with laymen. Offering or assuring advantage of any sort to a third person, as a midwife, porter, etc., in order to secure practice is not permissible. It is allowable to remit the fee in whole or in part to patients without means, but not to those who are able to pay. The title of specialist is allowed only to a physician who has secured a thorough education in his specialty and who devotes him-

self particularly to it. Unfavorable criticism of a physician before the public is forbidden. Patients who are receiving medical treatment at their home may have the advice of other physicians only in case of imminent danger, and in that case the physician who was treating the patient at first must be notified in due time. Patients who are received by a *locum tenens* must be transferred to the principal on his resumption of practice. Written contracts or oral arrangements of any sort with private or public corporations must be submitted to an appropriate committee of the medical council for their sanction before they are finally signed, renewed or extended. This code will be discussed by the medical councils at their next sessions; without doubt criticism will be offered in most cases as to one or other of the conditions, as each council is sovereign in this respect. Time will tell whether the executive committee will succeed in harmonizing the various wishes of the councils so as to secure a single code agreeable to all of the councils."

Number of Physicians, Contract Practice, Etc. The number of physicians in European countries is less in proportion to population than in America. In Austria there is about 1 physician to 2,250 inhabitants. In the cities the proportion is greater, varying from 1 to 560 in Prague, or 1 to 700 in Vienna, to 1 to 1,600 in Graz. In Berlin the proportion is about 1 to 800, and about 1 to 1,000 in all the large cities of Germany. In England it is estimated that the average income of a physician is \$1,000. Medical fees are generally small and some of the societies of France have resolved that in consequence of the increased cost of living the fees should be raised. The chief economic abuses which the profession in Europe find inimical to their financial success are: (1) The increase of specialists; (2) the dispensary evil, and (3) the sick benefit societies.

"In some university cities in Germany the percentage of specialists, including the university teachers, amounted to over 40%. Statistics obtained by a private investigation show how greatly the number of specialists has increased in some large cities. According to these figures the percentage of specialists increased from 1885 to 1905 as follows: In Stuttgart from 12.2 to 45.4; in Dresden from 8.0 to 41.6; in Frankfurt-on-the-Main from 7.5 to 41.6;

in Munich from 9.2 to 40, and in Leipsic from 10.4 to 37.0. This increase in specialists extends not only to single cities, but is observed throughout the entire country, so that specialists at the present time are located not merely in the large cities as formerly, but even in cities of 10,000 and even fewer inhabitants. The field of labor of the general practitioner, the sources of his income and the sources for the perfecting of his scientific skill are continually being narrowed. In the better situated families, now-a-days, the general practitioner is scarcely consulted any more, but the people go directly to the different specialists and the family physician, formerly generally employed, either very often does not exist at the present day or his task is simply in case of sickness to select the individual specialist. He is, as the saying goes, 'merely an address book for specialists.'

"In England, France, Germany and Austria physicians are trying to correct the dispensary abuses. In 1906 in Austria the government issued the following order with regard to the out-treatment of patients in the Vienna public hospitals: 'The dispensaries are institutions for free medical treatment of needy patients. While the dispensaries are intended only for the needy patients, no one will be refused the distinctly necessary first medical aid, and the authorities of the dispensary have the right, in case of necessity, to have the patient who has come under treatment, report a second time for the purpose of further examination. The patient requiring aid from the dispensary who is not in the position to show legal evidence of poverty should bring a certificate from the poor-law board regarding his neediness. Exceptions to the necessity of showing evidence of need are permissible: (a) If new methods of treatment are distinctly demanded with such apparatus as is not at the time at the disposal of private physicians; (b) in the ambulatory treatment of patients, of the third poor-law class; (c) if an especially tedious ambulatory treatment must be applied, which requires the knowledge of a specialist. Persons who have sick insurance are in general excluded from treatment in the dispensaries, and may be admitted only when they come with an order from the physician of the sick benefit society.' The necessity for restriction of this imposition, especially in Berlin, is shown by the fact that 145,000 patients were

treated in 1905 in 20 of the state polyclinics of this city. Among these patients there are occasionally found well-to-do people from Berlin and the surrounding country."

The medical profession of Berlin and the directors of most of the polyclinics have reached the following agreement:

"1. In public dispensaries no payment for medical treatment is to be taken, but compensation for the expenses is permissible. First medical aid in emergencies does not involve dispensary treatment. 2. The dispensary physicians are not to deliver certificates entitling the insured to sick benefits. 3 (a) In public dispensaries only needy patients shall be treated. (b) Notice of these regulations shall be given to the dispensary public by placards in the public polyclinics. (c) The directors of public polyclinics shall inform themselves, in doubtful cases, with regard to the means of those applying for treatment in the polyclinics. 4. It should be explained to physicians that so far as possible they should not send the sick to the city dispensaries."

The statistics of Paris indicate that of 43,220 deaths in 1905, 25,221 or 48% died in hospitals and consequently at the public expense. In 1880 the proportion was only 29%. The abuse of the dispensary is as great as in Germany. The proposal to impose a small fee (75 centime, 15 cents) does not meet approval of the medical profession, as it would be a burden to the worthy poor and a ridiculous sum for the wealthy impostors. A commission is proposed to investigate the matter.

There has for a long time been a strife between the physicians of Germany and the sick benefit societies (Krankenkassen) in reference to the right of the patient to choose the physician by whom he shall be treated, under the insurance law, and also with reference to the appointment of insurance physicians and the fees to be paid for services to the societies. The physicians of Cologne, being unable to come to an agreement with the sick benefit societies, organized a strike by which they refused to treat the members of the societies. The insurance societies accordingly imported a number of physicians as "strike breakers."

Similar difficulties have arisen in Paris under the workings of the workmen's compensation act. Unfortunately,

this law does not provide that the workman shall have the right to choose his own physician. The insurance companies have compelled the physicians to agree to accept payment contracted for according to a schedule fixed in advance. The physicians are thus paid, not according to the gravity of the injury, but so much per accident—according to certain contracts, 10 francs, or about \$2 for each case. Fortunately, some judges, taking into account the varying requirements of injuries, have refused to recognize the validity of such contracts, declaring that to do so would be “to insult the medical profession, to put the unfortunate injured at the mercy of unscrupulous insurance companies, and to impose a real pact of famine on the physicians who care for those crippled by industrial accident.”

The abuses of the insurance companies have led to a modification of the law of 1898, which, unfortunately, does not go far enough. Instead of providing that the victim of accident or his representatives alone have the right to choose his physician, the law of 1905 merely provides that the victim shall always have the privilege of choosing his physician. The insurance companies seek, in disregard of law and of the welfare of the injured, to impose on the victim the company's physician. By the law of 1905 a fine of 16 to 300 francs (about \$3.20 to \$60) may be imposed on anyone who, by threat of dismissal or by withholding or threats of withholding indemnities due under the law, shall interfere or attempt to interfere with the right of the victim to choose his own physician.

The insurance companies have also been able to make advantageous arrangements with certain experts, whose morality is less elevated than their medical reputation. The result is that, out of 70 physicians on the list of experts, the companies' lawyers see that only a certain dozen are always called on for expert evidence in accident cases. Therefore, as the minimum price of expert evidence is 100 francs (about \$20), and as in 1907, for instance, the 12 experts have delivered nearly 8,000 pieces of expert evidence, the insurance companies have thrown into their hands in the course of a year 800,000 francs (nearly \$160,000). These experts show their gratitude by assisting the

companies to economize at the expense of the injured and of other physicians. They arbitrarily reduce the bills for medical expenses, and as arbitrarily minimize the incapacity for work resulting from accidents.

In both Germany and Austria important legislation extending and regulating the matter of *industrial insurance* has been proposed. In Austria a very important bill, entitled the Social Insurance Act (*Sozialversicherung*), is now under consideration. Its bearing on medicine is great, as it will influence markedly the general health and physical development of the masses. The act unites the hitherto separated branches of insurance, namely, insurance against illness, accidents, old age and invalidism. It raises the maximum income which entitles the earner to free insurance to about \$600 a year; the number of persons coming under its operation is 6,500,000. Hitherto the maximum income of persons entitled to free insurance was about \$240, and 3,000,000 came under the operations of the law.

The third clause, however, is a new feature on the program of social legislation. Over 10,000,000 wage-earners come under its provisions, and there are no precedents as to its operation in this or other countries. The insurance against illness provides for free medical and therapeutic aid of all kinds.

The act endeavors to provide for women at childbirth. The pregnant woman will receive daily relief amounting to 150% of sick pay for one week before and 4 weeks after giving birth to a child; if she continues ill for a longer period, sick pay will be granted, but the woman must not go to work so long as she receives relief. A minimum period of 6 weeks has been demanded for convalescence, since this would tend to increase breast-feeding. A "breast-feeding premium" has also been suggested; but it is doubtful whether the government will concede that.

Those entitled to insurance against invalidism will comprise about 30% of the population. The yearly payment to those invalided will vary from 125 to 560 crowns (\$25 to \$112); it will depend not only on the number of premiums paid, but on the earning capacity during activity. The term "invalid" is thus defined: Whoever is incapacitated from earning one-third of the sum which

healthy persons of his age and abilities can earn at his place of residence, is termed an invalid. Incapacity may result from age, disease or other causes. Special care will be taken to place patients in sanitariums, homes for convalescents and open-air institutions.

Accidents are to be treated for one year as illnesses, with the right to sick pay; if the effects of the accident last longer, a special accident payment is to be made, according to special schedules. A new valuation of the various organs and members of the body is also given in the act. Special medical experts will be appointed to examine the victims of accident and to direct the treatment. The maximum yearly payment to a person totally disabled by injury will be 1,200 crowns (\$240). If the disabled person must be nursed by others, he will receive 50% more (\$360).

The new German bill extends insurance for sickness to agricultural and forestry laborers and to messengers and domestic employees. The right of free choice of physician has not been confirmed by law.

The workmen's Compensation Act in Great Britain has produced some peculiar problems and new situations. One man claimed damages for a flea-bite on the grounds that it was an accident within the meaning of the act, but this claim was scouted by the judge. Some wisdom still lingers on the judicial bench, whatever may be said of our legislators. A case has just been tried at Belfast in which a woman claimed compensation for the death of her husband, the chief engineer of a steamer, from dysentery, which occurred on a voyage to Calcutta. The judge dismissed the case, holding that dysentery was not an accident within the meaning of the act.

The following case occurred in Dublin: A laborer sued a firm of fertilizer manufacturers for injuries to his spine received while loading fertilizer in barrows. The accident was the result of a heap of fertilizer, 7 or 8 feet high, falling on him. He became unconscious and was treated in a hospital. His physician stated that he was suffering from an injury to the spine which prevented him from working. He moved about the court with the aid of crutches. On the other hand, medical evidence was produced for the defendants to show that the plaintiff had

no organic disease of the spine, and that the only reason why he could not walk was that he had the fixed idea in his mind that he was unable to do so. Sir Charles Ball was asked to examine the plaintiff as medical assessor. He agreed with the evidence that there was no organic disease, but he did not think that the man was malingering, but that he was in a nervous and hypochondriacal condition and was not fit for work at present. The judge commented on the enormous advantage of the aid of a medical assessor in these cases. The important question was how far the accident could be held responsible for the man's mental condition as distinguished from physical injuries. He suggested that some agreement should be arrived at between the parties. By consent of both parties he made an interim order for payment of an allowance to the plaintiff and adjourned the case until next session.

The insurance idea has been applied in Charlottenburg, near Berlin, to the *insurance of school children against accidents*. The insurance applies to all accidents which befall students either at the institution or on excursions which they undertake under the direction of the instructors. The annual premium amounts to 33 cents, for which the student is entitled to receive 72 cents a day as long as he is confined to his room by an injury which he has received at school, either in gymnastics or in any other way. In case of complete invalidism, the injured student receives a sum which is fixed according to the especial circumstances, with a maximum of \$720 (3,000 marks).

A more important application of this principle is the endeavor to secure *provision for women about to become mothers*. The legal provisions are deemed insufficient to insure the proper care of new-born children by working women. For this reason efforts of late have been increasing to insure lying-in women the means of sparing themselves a long enough time after delivery and of providing themselves sufficient nourishment, so that they may themselves nurse their infants as far as possible or at least devote themselves sufficiently to their care. The first motherhood society, which is to be regarded as a forerunner of a general motherhood insurance, was founded a short time ago at Carlsruhe. The functions of the society consist in the

provision of money for lying-in women and nursing premiums. At the same time the office serves the purpose of instruction and explanation. The member has a claim on the society only when she has belonged to it at least one year. Only residents of Carlsruhe or persons employed there whose private or family income for the last year did not exceed the sum of \$750 (3,000 marks) are entitled to membership. Members who leave Carlsruhe but still reside in Germany are entitled to a claim on the society only until the next demand. As money for childbed after a membership for one year \$5 (20 marks), after two years \$7.50, after three years \$10 are paid, half of which is given on notice of delivery and one-fourth after the lapse of one and two weeks each. Under special circumstances the management may pay the whole sum at one time. In case of twins the sum is raised \$2.50 (10 marks). Mothers belonging to the society who suckle their children for 6 weeks after delivery receive a nursing premium of 75 cents (3 marks), and those who continue to nurse their children 3 months after delivery receive a further premium of 75 cents. Every member pays as monthly dues 12 cents (50 pfennig). Some officials and sick benefit associations have already placed considerable sums at the disposal of the new society.

In France, Italy and Switzerland, bills are under consideration for assuring to convalescent mothers aid during the suspension of their work. But, curiously enough, what especially retards the realization of this reform is the attempt to give too wide a scope to such assistance. In the French Chamber of Deputies some time ago, and recently in the Senate, such bills have failed of adoption, because they provided for giving of such relief to all wage-earning mothers, not merely to those employed in workshops or factories. It is, nevertheless, evident that the working-woman in the factory or workshop has greater need of protection than the farm servant or the housekeeper.

A novel form of legislation has been introduced into the House of Commons. It proposes to empower local sanitary authorities to *assist necessitous women before and after childbirth*. The object is to reduce infant mortality by feeding, supervising and instructing poor, ignorant moth-

ers. The local authority is given power to provide food, advice and other assistance for the mother before and for 6 months after the birth of the child. As a condition it may insist on the mother nursing the child, attending a class for instruction or refraining from working.

ALCOHOL.

The Antialcohol Movement. A recent report of the League of Austrian Antialcoholists contains much interesting information. For instance, many clinical teachers in the German and Slavic universities of Austria (in Vienna, Prague, Cracow, Lemberg and Graz) have recommended a non-alcoholic plan of treatment of diseases, such as pneumonia, erysipelas and septicemia, in which alcohol has hitherto been frequently used. Among the students, who still regard beer as indispensable at their meetings, the antialcohol movement is constantly gaining ground, in part because of the admission of women to the universities. The league has devoted considerable sums, thus far in vain, to the search for a substitute for beer.

The Consumption of Alcohol and Absinthe in France. The statistics and chart showing the consumption of alcohol and absinthe in France during the year 1907 have been recently published. In glancing over the chart one is struck by the inequality of the consumption in the different districts of France. A compact group of 21 departments which, starting from Paris, embraces part of the northeast, the north and the west of France—the departments producing beer and cider—forms a large black blot. Seine Inférieure takes the lead, with nearly 12 liters *per capita*; the consumption in the other departments of this group ranges from 4.06 (Seine) to 9.11 liters. The departments on the east and southeast consume from 2 to 4 liters *per capita*. Finally one sees on the chart a great white space, extending over the center, the southwest and a larger part of the east; this represents the departments in which the consumption of alcohol falls below 2 liters *per capita*. The consumption of alcohol is higher

in the towns than in the country, the proportion remaining the same according to the groups of departments above indicated. One reassuring deduction may be drawn from these statistics, namely, that the consumption of alcohol (but not of absinthe) tends generally to diminish, and that this diminution is more rapid in the town than in the country. This is proved by comparison of the figures for 1897 and 1907. Havre and Rouen, which head the list, have dropped from 19 to 15 and from 17.51 to 13.79 liters *per capita*; Paris from 7.95 to 3.87; Marseilles from 7.58 to 3.45; Lyons from 5.73 to 2.59; Bordeaux from 4.52 to 2.75; Nice from 5.09 to 2.32; Toulon from 8.08 to 4.70; Montpellier from 5.27 to 2.27, etc.

However, if the consumption of alcohol, generally speaking, has diminished in France, the statistics reveal another danger, namely, an increased consumption of absinthe. In this the south takes a startling lead over the north. It is the provinces of the south, southeast and east which drink most absinthe. Marseilles stands at the head, with 3 liters of pure absinthe *per capita*; on the other hand, in the departments of the north, center and west, the consumption of absinthe does not reach 1 liter *per capita*.

Criminality and Alcoholism. For several years, criminality has increased in truly disquieting proportions. The principal cause appears to be alcoholism. Below is an instructive table showing that, since the law on free traffic in liquors, the increase has been almost parallel to the increase in the consumption of alcohol.

	1881.	1905.
Number of licenses.....	367,829	473,593
Hectoliters of alcohol manufactured.....	1,822,000	2,609,000
Murders brought to justice.....	182	274
Murders not brought to justice.....	344	495
Suicides	6,741	8,932
Cases of insanity.....	47,858	71,547

The Temperance Movement in Germany. In 1908, the German League Against the Misuse of Spirituous Beverages celebrated its silver jubilee. The conditions now are undoubtedly more favorable than when the society was founded. The combined efforts of physicians, national economists, public officials, etc., have resulted in a marked reduction in the consumption of alcohol in recent years. One can only rejoice at this fact. It is true that a large part of

the national wealth is still wasted in the consumption of intoxicating beverages every year, wealth that might have been put to better uses. Until the beginning of the campaign against the abuse of alcohol the consumption of beer and wine was almost a measure of the national feeling (*Masstab für die nationale Gesinnung*), especially in academic circles. Today this is happily changed. One need no longer feel ashamed of a moderate use of alcohol or even of total abstinence either in private circles or in the inns. Still there remains much to be done in this direction. As the renowned hygienist of Munich, Professor Gruber, showed in a recent address on the alcohol question, beer is still drunk very extensively. In 1905, 129 liters (33 gallons) per capita were used by the German people, and even if the use of brandy has diminished the consumption of absolute alcohol amounts to 9.6 liters (4½ gallons) per capita per year. Even now 3,000,000,000 marks (\$720,000,000) are spent for alcoholic beverages in Germany yearly, and many workmen's families spend from one fifth to one fourth of their earnings for such drinks. In Munich, which is, indeed, the greatest beer city in the world, immense amounts of beer are still consumed. However, even here gratifying progress is not to be denied, for in 1907 the consumption of beer was less by 200 liters per head than it was 20 years ago.

It is evident that the authorities are supporting the campaign against intemperance as far as possible. The organs of the social workmen's insurance societies, the railroad managers and the municipal officials are taking part in this campaign by issuing appropriate regulations, establishing places for the sale of alcohol-free drinks, and by disciplinary punishment of drunkenness and the discharge of intoxicated employes. Some railroad managers have lately installed in the workshops automatic vending machines for bouillon capsules, which are gladly used by the workmen to prepare for themselves, with the aid of hot water, a palatable broth.

For a long time apparatus for furnishing Seltzer water and for making coffee have been placed in the workshops. The use of milk, tea, coffee and nutritious broth is constantly increasing among the railroad employes. The traffic

in these articles is either in the hands of the company or in those of the workmen's societies, which apply the profits to benevolent purposes.

Total Abstinence and Longevity. The United Kingdom Temperance and General Provident Institution, an insurance company, has two departments—one for total abstinens and one for users of liquors. As the statistics of these departments are kept separately they afford a useful means of comparing the mortality of total abstinens with that of the general population. The report for the year 1908 shows that in the temperance section 457 claims were expected according to the ordinary life tables, but only 274 were made; whereas, in the general section 461 claims were expected and 407 were made. Thus the proportion of actual to expected claims in the former was only 46% as compared with 64% in the latter. The large sum of \$250,000 was thus saved in the temperance section and goes to swell the bonuses of the corresponding policy holders. Though both classes of lives showed good results there was a marked advantage in the case of total abstinens. These results are open to one criticism: Decisive as they are in showing the superior longevity of total abstinens, they are not decisive in proving the superiority of total abstinence; for those who adopt total abstinence are always prudent persons who regulate their lives in other ways much more carefully than the general population.

Regulation of Liquor Problem. C. A. Rosenwasser¹ suggests the following measures for regulation and solution of the liquor problem:

1. Teach the people, especially children, the wisdom and importance of leaving alcohol in every form severely alone.
2. Recognizing that, in spite of all teaching, the vast majority of people will drink alcoholic beverages, regulate the traffic by just and sensible laws, and enforce the laws.
3. Insure the purity of alcoholic beverages by strengthening and enforcing the pure food laws.
4. Discourage the bar system by encouraging the establishment of restaurants having no bars.
5. Discourage the use of the stronger alcoholic beverage.

(1) Medical Record, Sept. 11, 1909.

ages by encouraging the use of the milder ones, such as beer and light wine, in their place.

6. Try to put a stop to the treating custom.

7. Treat, in properly equipped hospitals, or farm colonies, the victims of the drink habit.

THE BIRTH RATE.

Statistics given by a German authority show a decline in the birth rate in all civilized nations. The following statistics show the situation in England:

The quarterly returns issued by the Registrar-General show that during the 3 months ending September 30, 295,052 births and 146,239 deaths were registered in the United Kingdom, the natural increase of population, therefore, being 148,813. The births registered in England and Wales were in the proportion of 26.6 per 1,000 of the population, which was 1.6 below the mean rate of the preceding ten third quarters of the year. The deaths during the same period were in the proportion of 12.8 per 1,000, or 2.7 below the mean rate of the preceding ten third quarters. The deaths of infants under 1 year were in the proportion of 126 per 1,000 births as compared with an average of 175 in the ten preceding third quarters. The marriage rate for the quarter ending June 30 was only 16.7 per 1,000 as compared with an average of 17.1 recorded in the second quarters of the preceding 10 years.

The word "depopulation" may be understood in an absolute or relative sense; but a nation which is decreasing even only by comparison with its more rapidly increasing neighbors will eventually decrease absolutely. This is the case in France. According to the official census report for 1907, the number of births was 773,969, while the number of deaths was 793,889, making an excess of 19,920 deaths over births. The birth rate has long been steadily declining. Since 1901 the number of births has been less each year than for the preceding year.

For 1902, the decrease was.....	11,896
For 1903, the decrease was.....	18,666
For 1904, the decrease was.....	8,483
For 1905, the decrease was.....	10,938
For 1906, the decrease was.....	444
For 1907, the decrease was.....	32,878

As the mortality has by no means been diminishing at the same rate, the arrival of a time when the birth rate shall fall below the death rate was inevitable. The declining birth rate is, indeed, far from peculiar to France; it has been noted in almost all countries of Europe. The phenomenon is the result of general causes, among which the progressive development of manufacturing industries and of means of communication and the immigration of the rural population to the large cities are conspicuous. It must be admitted, however, that in France the evil is more serious than elsewhere. What are the causes? Some believe that the warfare on religious ideas in France is responsible. The Christian religion has always condemned severely the evil practices which destroy life at its source, and that is why provinces like Brittany, where the religious sentiment has made the best stand, also have the highest birth rate.

Without denying the importance of this factor, however, it must be recognized that there are many other causes inherent in the mode of life and thinking peculiar to France, or at least more accentuated in France than elsewhere. Individualism is the basis of the modern French mental make-up. De Foville says bitterly that ambition, vanity, the craving to show off, to enjoy and to possess, are the motives to which our countrymen are constantly yielding more and more. The thirst for prosperity increases with prosperity itself. Every one seeks to enrich himself at all hazards, and children, with all the expenses that they bring, are dreaded. Then, too, many of the French are more ambitious for their descendants than for themselves, and, for the sake of the first-born, they are unwilling that he should have brothers or sisters. Moreover, at school, and everywhere else, thrift and economy are inculcated. People are beginning to perceive now that this has been carried too far, for it is for the sake of thrift and economy that the French restrict the size of their families.

These causes have contributed to the success of an abominable propaganda organized under the deceptive name of "leagues of regeneration." These leagues preach the right of abortion and teach young women that they may employ

those vile means which, without requiring the privations entailed by the "moral restraint" of Malthus, promise the same results. A news item of recent date indicates the extent of the evil. It states that there has just been arrested at Cambrai, in the north of France, an old man of 76, known as the "Friend of the People," who earned this title by producing several thousand abortions.

Legislative interference might remedy the condition to some extent, especially modifications of the tax laws. Families with several children are now grievously over-taxed, and unfortunately, the income tax bill now under debate makes no discrimination between the bachelor and the father of 10 children.

Skeptics refuse to admit that legislation can furnish any remedy for depopulation, but the *statistics in regard to marriages* testify to the contrary. There were in 1907 more marriages than ever before, a total of 314,908 marriages, 8,221 more than the previous year. This abrupt and considerable increase is due solely to the law of June 21, 1907, simplifying appreciably the formalities of marriage, which are more complicated in France than in any other country. The fact that the increase dates from July, and has continued into 1908, proves that it is the result of the law.

The German Birth Rate in Austria. In an interesting compilation of statistical data, Dr. Hainisch recently pointed out that the vitality of the German race among the numerous nations composing the Austrian empire is increasing remarkably. In 1880-1885 the excess of births over deaths was in this country 5.17 per 1,000 Germans, against 10.09 amongst the northern Slavonic nation, 7.73 amongst the southern Slavs, and 8.34 amongst the Italo-Slavs, while in Tyrol the Germans had a rate of only 0.31 as against one of 5.92 of the purely Italian population. Regular and constant records kept by the statistical bureau of the ministry of the interior reveal a distinct and constantly increasing tendency in the German race to improve its vitality and lower its mortality. Thus the years 1901-1905 show that the excess of births over deaths in the purely German districts is now 9.58 per 1,000, among the northern Slavs 11.88, among the southern Slavs 10.63,

while Tyrol showed 7.95 for the German part of the population, but 8.50 for the Italian component. The German increase of population was even smaller than that of the other nations, but it had increased by 85% during the last 20 years.

A MEDICAL SOCIETY ONE HUNDRED YEARS AGO

L. W. Flanders¹ describes the Strafford District Society of New Hampshire, inaugurated in 1808. It held 3 meetings a year, one of which was always held at Dover and the 2 others at places agreed on previous to adjournment. In one instance the society voted to adjourn to meet again "as near Gilmanton Corner as may be convenient." Fortunately, this was the last meeting before the reconstruction; otherwise the services of a land surveyor might have been necessary to determine the exact spot for assembling. These early years seem to have been characterized by inordinate zeal. It was voted that every member should present something of interest at each meeting of the society, a vote that was soon reconsidered, for it caused an alarming percentage of absentees. A system of fines was instituted. An officer was assessed \$1 for each absence from the meetings, and members were charged 50 cents for a similar negligence. Dr. Jabez Dow was appointed in 1813 to interview every member concerning his experience with lobelia inflata and hemlock gum, and give a dissertation on these two agents at the next annual meeting. In 1814 Dr. Jabez Dow begged for more time. In 1815 he confessed that he was still unprepared and was granted a further extension. In February, 1816, lobelia inflata, true to its physiologic action, came up again, and this time Dr. Dow was excused from further service. It is interesting to note, however, that Dr. Asa Perkins immediately grappled with it and delivered a learned dissertation on its virtues in 1818.

They were not mealy-mouthed, these old fathers in medicine. In one instance two members were cited before the society for "imposing on the public a nostrum

(1) Jour. Am. Med. Assoc., Feb. 20, 1909.

known as 'Savage's Deobstruent Billious Pills,' and when they refused to reveal the composition of said nostrum they were promptly expelled and a notice of the action was published in the local newspapers.

Those in charge of the records today can study with profit the work of their predecessors of a hundred years ago. Theirs was an iron age, and very fittingly they used an iron ink. Those pages written a century ago are as legible today as ever, while some of the writing of twenty years' standing is fading so rapidly that it will soon be indecipherable. County secretaries should remember that the keeping of records is a sacred trust and should select for the duty an imperishable ink. The chirography of that early day deserves mention. All wrote hands that are remarkably legible, while some are positively ornate.

Early in the history of the institution arrangements were made for receiving patients. In the records of the meeting of 1809 we find the following resolution:

Resolved, That when any patient be offered to the association for examination it shall be the duty of every member to examine him or her satisfactorily, when the patient shall retire, and each and every member, beginning with the youngest, shall give his opinion of the disease and of the practice to be pursued.

A glance at one or two of these cases will be instructive.

A Mrs. Berry was brought in for examination. I quote verbatim:

Dr. Lindsay's opinion was a general bodily debility and inaction of the whole system. Dr. Kittredge, calculi of the bladder and inflammation of the mucous membrane of the bladder, consequently a general debility. Dr. Morrison, dropsy of the ovaries. Dr. Hammons, general debility which is the cause of the general symptoms and occasional spasm of the neck of the bladder. From this we learn that general debility which so often appears in the death certificates of today is sanctioned by ancient usage. The enthusiasm and earnestness of the members is shown by the fact that many of them drove 30 and 40 miles in January to attend these gatherings. Surely theirs were lives of continual hardship and self-sacrifice, a fact that

comes out most touchingly in their obituaries. Several died between the ages of 35 and 45, sometimes from contagion taken at the bedside, and very often because of prolonged physical and mental strain which rendered them incapable or resisting the invasion of disease. The surgeons of today cannot appreciate the strain of operating without an anesthetic. We read of that sturdy pioneer in surgery, Dr. Nathan Smith, that on one occasion with tears in his eyes he begged his assistant to throw himself across the bed that he might be hidden from the eyes of the trembling boy whose leg he was about to amputate.

CENTENARY OF OVARIOTOMY.

The year 1909 marks the centenary of ovariectomy, which was the beginning from which the pelvic and abdominal surgery of the present day has developed. In an address by L. S. McMurtry¹ the following details of the life of Ephraim McDowell, the first ovariectomist, are given:

It would be a mistake to suppose that McDowell was a rude but courageous backwoodsman who by accident or mishap undertook an untried feat in surgery and succeeded in spite of a disregard of all surgical rules and established principles. He was born in Rockbridge County, Virginia, March 11, 1771. After receiving his early education at the classical seminary at Georgetown, Ky., he entered on the study of medicine in the office of Dr. Humphreys. In 1793-4 he attended the University of Edinburgh, receiving private instructions from John Bell, the most able and eloquent of the Scottish surgeons of his day. That portion of Mr. Bell's course in which he lectured on the diseases of the ovaries and depicted the hopeless doom to which their victims were condemned made a powerful impression on his auditor, which impelled him, 16 years afterward, to attempt what was considered an impossibility. McDowell achieved a great reputation throughout the Western and Southern states as a surgeon and performed as far as known every surgical operation then practiced. In the days when anesthesia was unknown he performed lithotomy 22 times without a death, and frequently operated

(1) N. Y. Med. Jour., May 8, 1909.

for strangulated hernia, performed amputations and did tracheotomy, etc.

"In 1809, fourteen years after he began the practice of his profession, McDowell's opportunity was presented. He was called to see a Mrs. Crawford, living 60 miles distant from Danville, who was supposed by herself and her physicians to be pregnant and beyond her term, with most serious complications. After careful examination he pronounced the case to be one of ovarian tumor; explained the hopeless character of the disease; expressed his conviction that it was feasible to undertake its removal; frankly announced that it would be in the nature of an experiment but an experiment that was promising. In a word, he had faith in himself and his resources, which inspired confidence and hope in the patient. Mrs. Crawford accepted the proffered aid at once, and in a few days went to Danville, 60 miles distant, on horseback, where the operation was successfully performed and followed by prompt and perfect recovery.

"It is known that McDowell had an excellent medical library for that time, and that he devoted much of his leisure time to his books, but he possessed an aversion to writing. Like many able men in our profession of the present day, he was absorbed in practice, and literary work of every kind was burdensome to him. Moreover, we must remember that he did not have the stimulus of the daily mail and numerous medical journals; also that no medical society was in existence in his section of the country. Seven years elapsed after the operation before he made a report for publication, during which time he had operated in two additional cases, both followed by recovery. The title of his paper is 'Three Cases of Extirpation of Diseased Ovaries,' and his description of the symptoms and operation is concise and clear, describing most essential points but without any minute account of the pathology and daily progress after operation. That he was inspired by the teachings of Mr. John Bell, of Edinburgh, to undertake the operation is apparent from the fact that his report of his cases was forwarded to his revered master. The report failed to reach Mr. Bell, who was absent on account of ill health, and McDowell prepared another copy and forwarded it to the *Eclectic Repertory*

and *Analytical Review*, published in Philadelphia, where it appeared in the issue of October, 1816. The brevity and disregard of many essential details, which characterized the report, exposed McDowell to criticism, and articles sarcastic and incredulous appeared in the *Repertory*, while Dr. James Johnson, the learned editor of the *London Medico-Chirurgical Review*, expressed outright his disbelief of McDowell's statements. A few years afterward, when the accuracy of the reports had been verified and confirmed by the report of additional cases, Dr. Johnson editorially acknowledged his error, saying "there were circumstances in the narrative of the first 3 cases that raised misgivings in our mind, for which uncharitableness we ask pardon of God and Dr. McDowell, of Danville."

In Oct., 1819, he published 2 additional cases. According to Dr. Wm. A. McDowell, his nephew and pupil, the total number of ovariectomies done by Ephraim McDowell was 13, with 8 recoveries and 5 deaths. Unfortunately the report of his first case failed to record such details of environment, preparation and after treatment as so important an operation should have received. McMurtry states that the story of a mob gathered about his house, threatening his life on account of the fancied reckless hazard of life in attempting an untried experiment, is pure fiction. It is stated that he operated on a Mrs. Overton at the residence of President Andrew Jackson, near Nashville, Tenn., with the assistance of the general. Another of his patients in Tennessee was James K. Polk, afterward president of the United States, upon whom he did lithotomy when the patient was 14 years of age.

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